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Guidance to State and Local Agencies in Preparing Regulations to Control Volatile Organic Compounds from Ten Stationary Source Categories

GCA Corp., Bedford, MA

Prepared for

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Office of Air Quality
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Guidance to State and Local Agencies in Preparing Regulations to Control Volatile Organic Compounds from Ten Stationary Source Categories

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A specific sample regulation is written for each CTG industrial category. After each section within each sample regulation there is a discussion of information pertinent to that section. Appendix A contains general provisions which are not based on the CTG documents but are provided strictly as additional information for regulatory agencies' consideration. Appendix B contains written comments received on the draft final report, reprinted in their entirety.

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Publication No. EPA-450/2-79-004

ABSTRACT

This document provides assistance to state and local air pollution control agencies in preparing Reasonably Available Control Technology (RACT) regulations for 10 industrial categories covered by the Control Techniques Guidelines (CTG) documents published between January 1978 and January 1979. The CTG source categories covered by this report are as follows: Leaks from Petroleum Refinery Equipment; Surface Coating of Miscellaneous Metal Parts and Products; Manufacture of Vegetable Oil; Surface Coating of Flat Wood Paneling; Manufacture of Synthesized Pharmaceutical Products; Manufacture of Pneumatic Rubber Tires; Graphic Arts - Rotogravure and Flexography; Petroleum Liquid Storage in External Floating Roof Tanks; Perchloroethylene Dry Cleaning Systems; and Leaks from Gasoline Tank Trucks and Vapor Collection Systems. The intent of this report is to provide a rational and factual basis for state and local agencies to develop industry-specific RACT regulations in their own codes.

The arrangement of this guidance is such that a specific sample regulation is written for each CTG industrial category. After each section within each sample regulation there is a discussion of information pertinent to that section of the sample regulation. Appendix A contains general provisions which are not based on the CTG documents but are provided strictly as additional information for the regulatory agency's consideration. Appendix B contains written comments received on the draft final report, reprinted in their entirety. A substantial amount of information, which should be considered by the state and local agencies, is contained in the comments received.

CONTENTS

Abstract iii
Acknowledgment viii

INTRODUCTION 1

PART I General Definitions 5

PART II Specific Provisions 9

§XX.9000 Petroleum Refinery Equipment Leaks 11
§XX.9100 Surface Coating of Miscellaneous Metal Parts and Products 25
§XX.9200 Manufacture of Vegetable Oil 43
§XX.9300 Surface Coating of Flat Wood Paneling 47
§XX.9400 Manufacture of Synthesized Pharmaceutical Products 59
§XX.9500 Manufacture of Pneumatic Rubber Tires 71
§XX.9600 Graphic Arts Systems 89
§XX.9700 Petroleum Liquid Storage in External Floating Roof Tanks 103
§XX.9800 Perchloroethylene Dry Cleaning Systems 115
§XX.9900 Leaks from Gasoline Tank Trucks and Vapor Collection Systems 125

Appendices

A. §XX.8000 General Provisions A-1
B. Comments on Draft Final Report B-1
§XX.9000 Petroleum Refinery Equipment Leaks B-3
American Petroleum Institute* B-5
Gulf Oil Company* B-21
Shell Oil Company* B-23
Union Oil Company of California* B-28
§XX.9100 Surface Coating of Miscellaneous Metal Parts and Products B-33
Deere & Company B-35
E.I. Dupont DeNemours & Company B-38
Freightliner Corporation B-43
General Motor Corporation B-45
Ransburg Electrostatic Equipment (6/25/79) B-47
U.S. EPA, Chemicals and Petroleum Branch (8/8/79) . . B-49
Ransburg Electrostatic Equipment (8/28/79) B-52

Preceding page blank

CONTENTS (continued)

§XX.9200 Manufacture of Vegetable Oil B-57
Crown Iron Works Company B-59
National Cottonseed Products Association, Inc. B-65
National Soybean Processors Association B-67
§XX.9300 Surface Coating of Flat Wood Paneling B-71
Vanply Inc. B-73
§XX.9400 Manufacture of Synthesized Pharmaceutical Products B-75
Pharmaceutical Manufacturers Association B-77
§XX.9500 Manufacture of Pneumatic Rubber Tires B-87
Armstrong Rubber B-89
BF Goodrich Company B-91
Firestone Tire and Rubber Company B-98
General Tire & Rubber Company B-103
Goodyear Tire & Rubber Company B-107
Rubber Manufacturers Association B-112
Uniroyal International B-131
§XX.9600 Graphic Arts Systems B-133
Crown Zellerbach B-135
Dayton Press, Inc. B-137
Diversified Printing Corporation B-142
Envelope Manufacturers Association B-144
Flexible Packaging Association B-148
Flexographic Technical Association Incorporated. . . B-154
Gravure Research Institute, Inc. B-157
Gravure Technical Association, Inc. B-164
National Association of Printing Ink Manufacturers, Inc. B-165
Regenerative Environmental Equipment Co., Inc. . . . B-166
Rexham B-168
Reynolds Aluminum B-174
RJR Archer B-179
St. Regis Paper Company B-182
§XX.9700 Petroleum Liquid Storage in External Floating Roof Tanks B-185
American Petroleum Institute* B-187
Atlantic Richfield Company* B-188
Chevron U.S.A., Inc. (7/18/79) B-190
Getty Oil Company B-191
Marathon Oil Company B-193
Shell Oil Company* B-23
§XX.9800 Perchloroethylene Dry Cleaning Systems B-197
Dan Landon Enterprises, Inc. B-199
JMS Enterprises, Inc. B-200
Patton, Boggs & Blow B-201
TEAM Enterprises, Inc. B-207

CONTENTS (continued)

§XX.9900 Leaks from Gasoline Tank Trucks and Vapor Collection Systems B-209
American Petroleum Institute* B-187
Chevron U.S.A., Inc. (7/16/79) B-211
National Tank Truck Carriers, Inc. B-213
Truck Trailer Manufacture Association B-215
Union Oil Company of California* B-28
Miscellaneous B-233
Century Systems Corporation B-235

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*Comments are applicable to more than one of the following sections:

1) §XX.9000 Leaks from Petroleum Refinery Equipment
2) §XX.9700 Petroleum Liquid Storage in External Floating Roof Tanks
3) §XX.9900 Leaks from Gasoline Tank Trucks and Vapor Collection Systems

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We also wish to thank EPA's Regional Task Representatives and Mr. John Calcagni of EPA's Control Programs Development Division, who were specially convened to review the draft of the sample regulations. Their comments and advice are greatly appreciated.

ERRATA SHEET

EPA Report 450/2-79-004 -- Guidance to State and Local Agencies in Preparing Regulations to Control Volatile Organic Compounds from Ten Stationary Source Categories, September 1979

All changes relate to the chapter on Surface Coating of Miscellaneous Metal Parts and Products.

Page 31 - Paragraph (e) should be changed to read as follows: (changes underlined)

> (e) A capture system must be used in conjunction with the emission control systems in part (d)(2). The design and operation of a capture system must be consistent with good engineering practice, and shall be required to provide for an overall VOC emission reduction efficiency sufficient to meet the requirements of paragraph (a). The required VOC emission reduction shall be calculated on a unit volume of uncured solids basis.

Page 31 - next to the last paragraph - after the underlined sentence add:

> . . . , for other than incineration.

Page 39 - The second paragraph which begins "The mass rate . . . " should be deleted and the following text inserted in place thereof:

The underlying assumption for the kg VOC per liter of coating, minus water, type of emission limit is that VOC emissions from a particular category of coatings should meet a specific mass of VOC emitted per volume of uncured solids used. This means that if a low solvent coating with 50 percent solids and 50 percent solvent is the reference coating on which an emission limitation is based, VOC emissions from a conventional coating with 25 percent solids and 75 percent solvent must be controlled such that the actual mass of VOC emissions per volume of uncured solids used is equal to or less than the VOC emissions from the reference coating. This may be accomplished by calculating emission factors on a mass of VOC per volume of solids basis.

In order to determine the VOC reduction which must be achieved by add-on control equipment to meet an emission limitation, both the emission limitation and uncontrolled VOC mass emissions must be converted to a per unit volume of solids basis. The emission limitation and the coating of interest can be converted to a mass VOC per unit volume of solids basis using equations provided in case 3 of Appendix A of Volume VI of the surface coating CTG series, EPA-450/2-78-015. Subtracting the two numbers obtained produces the minimum mass of VOC reduction needed, as follows:

$$\overset{(1)}{\frac{\text{kg VOC (coating)}}{\ell\text{ solids}}} - \overset{(2)}{\frac{\text{kg VOC (emission limitation}}{\ell\text{ solids}}} = \overset{(3)}{\text{minimum kg of VOC reduction needed per liter of solids}}$$

The overall emission reduction efficiency required by the capture and control system to be equivalent to the emission limitation can then be determined by dividing figure (3) by figure (1) above.

The test procedure for compliance would consist of determining an average rate of coating usage and calculating a rate of uncured solids usage in liters/hr. The mass rate of VOC emission reduction by the control equipment would be calculated by measuring VOC mass concentration in the entrance and exit air streams along with gas flow measurements. This is accomplished by measuring organic carbon mass concentration by the procedure in EPA 450/2-78-041 and converting to mass VOC as described in the preceding section on page 38. The VOC emission reduction rate (kg VOC/hr) divided by the uncured solids usage rate (ℓ/hr) yields the actual VOC emission reduction per liter of solids used for comparison to the needed reduction (figure 3) calculated above.

January 14, 1980

INTRODUCTION

The Clean Air Act Amendments of 1977 require each state in which there is a nonattainment area to adopt and submit a revised State Implementation Plan (SIP), which meets the requirements of Section 110 and Subpart D of the Act. The oxidant plan portion of the SIP submittals must contain regulations which reflect the application of reasonably available control technology (RACT) to stationary sources for which control techniques guidelines (CTG) documents have been published.*

Eleven CTG's covering 15 source categories were published prior to January 1978. EPA published a guidance document, "Regulatory Guidance for Control of Volatile Organic Compound Emissions from 15 Categories of Stationary Sources," EPA-905/2-78-001, to assist the state and local agencies in developing regulations for the SIP submittal due in January 1979. Between January 1978 and January 1979 an additional 10 CTG documents (Group II) were published. Legally enforceable regulations must be submitted to EPA by July 1980 for these source categories.

The CTG documents recommend control technology and in some cases limits on the emission of volatile organic compounds (VOC) and contain information on the economic and technological feasibility of available techniques for the reduction of VOC emissions. EPA's intent in publishing the CTG documents is to provide the state and local regulatory agencies with information on the presumptive norm or reasonably available control technology for source categories. EPA defines RACT, however, as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. The state or local regulatory agencies preparing SIP submittals should be aware that the CTG documents (and this document) address categories of sources and do not fully account for variations within source categories.

This document provides assistance to state and local agencies in preparing RACT regulations for 10 industrial categories covered by the Group II CTG documents. The 10 CTG volatile organic compound source categories covered by this report are as follows:

- Leaks from Petroleum Refinery Equipment (EPA-450/2-78-036)
- Surface Coating of Miscellaneous Metal Parts and Products (EPA-450/2-78-015)

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*RACT regulations would not have to be adopted for these stationary sources, if a state can demonstrate attainment of the photochemical oxidant standard by photochemical dispersion modeling.

- Manufacture of Vegetable Oil (EPA-450/2-78-035)
- Surface Coating of Flat Wood Paneling (EPA-450/2-78-032)
- Manufacture of Synthesized Pharmaceutical Products (EPA-450/2-78-029)
- Manufacture of Pneumatic Rubber Tires (EPA-450/2-78-030)
- Graphic Arts - Rotogravure and Flexography (EPA-450/2-78-033)
- Petroleum Liquid Storage in External Floating Roof Tanks (EPA-450/2-78-047)
- Perchloroethylene Dry Cleaning Systems (EPA-450/2-78-050)
- Leaks from Gasoline Tank Trucks and Vapor Collection Systems (EPA-450/2-78-051)

EPA asked its consultant to review the CTG documents listed above from the point of view of a state agency and to write sample regulations. A draft report was produced in June 1979 which included sample regulations and discussions of each section of each regulation. The discussion sections included the "thought processes" that went into the regulatory language, issues and problems that were encountered, and in some instances requests for further information on particular points.

The draft report was widely distributed to industry and air pollution control agencies for comment. About 50 letters of comment were received from affected companies and business associations. Meetings with state agencies and key industry groups provided further input into this document. All of this information was reviewed and appropriate (in some cases substantial) modifications were made to the draft report. This document in final form reflects this extensive input effort.

EPA intended to meet several objectives in producing this final report. These objectives are as follows:

- Identify areas where difficulties existed in converting CTG information into regulatory language.
- Provide an opportunity for industry comment on CTG information after it has been converted to a regulatory format.
- Identify specific areas of industry concern.
- Provide assistance to state and local agencies preparing RACT regulations for the source categories covered by the Group II CTG's.

This report is organized as follows: Part I contains the General Definitions; Part II - Specific Provisions, contains all of the specific sample regulations; Appendix A contains general provisions; and Appendix B contains the written comments received on the draft final report, reprinted in their entirety. The general provisions in Appendix A are not contained in the CTG documents, but are provided strictly as additional information for regulatory agencies' consideration. Provisions similar to these already exist in most state codes and are included here because these types of requirements are essential to a fully enforceable set of regulations. In some cases the comments in Appendix B may not appear to be pertinent, due to the changes which have been made in finalizing this report. However, a substantial amount of information, which should be considered by the state and local agencies, is contained in the comments.

The arrangement of the Specific Provisions, Part II, of this report is such that a specific sample regulation is written for each CTG industrial category. After each section within a sample regulation there is a discussion of information pertinent to that section of the sample regulation. Some of the sections (e.g., Compliance Schedules) are very similar in each of the 10 sample regulations because this report attempts to make each sample regulation self-contained. This has the obvious advantages of making each sample regulation more readable and allowing changes in the regulatory language of one section without affecting any of the other sample regulations.

It should be emphasized that both the CTG documents and this document are, of necessity, general in nature. There are a number of valid reasons why state or local agencies might deviate from the general guidance provided in this report when developing regulations. The potential variability within source categories, which has already been mentioned, is an example of this. In addition, areas with severe oxidant problems may need more stringent emission limitations than those recommended in the CTG documents. According to EPA a state may develop case-by-case RACT requirements independent of EPA's recommendations for any source or group of sources, provided the State submits documentation which justifies its determinations.

This document is offered as guidance to assist state and local agencies in preparing RACT regulations for volatile organic compounds. The sample regulations are illustrative in nature and are not to be construed as rule-making by EPA. The intent of this report is to provide a rational and factual basis for state and local agencies to develop industry-specific RACT regulations in their own codes.

PART I

GENERAL DEFINITIONS

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GENERAL DEFINITIONS

Approved: Approved by the designated air pollution control official.

Breakdown: A sudden failure of a source of emission control or emission monitoring equipment to function as a result of wear, failure to repair, breakage, unavoidable damage, or other causes.

Capture Efficiency: The weight per unit time of VOC entering a capture system and delivered to a control device divided by the weight per unit time of VOC emitted by a source of VOC, expressed as a percentage.

Capture System: The equipment (including hoods, ducts, fans, etc.) used to contain, capture, or transport a pollutant to a control device.

Carbon Adsorption System: A device containing adsorbent material (e.g., activitated carbon, aluminum, silica gel); an inlet and outlet for exhaust gases; and a system to regenerate the saturated adsorbent. The carbon adsorption system must provide for the proper disposal or reuse of all VOC adsorbed.

Carbon Bed Breakthrough: A concentration of VOC in the carbon adsorption device exhaust that exceeds 10 percent by weight of the inlet VOC concentration.

Coating Applicator: An apparatus used to apply a surface coating.

Coating Line: One or more apparatus or operations which include a coating applicator, flash-off area, and oven wherein a surface coating is applied, dried, and/or cured.

Condenser: A device which removes condensable vapors by a reduction in the temperature of the captured gases. A surface condenser effects condensation by indirect contact between the coolant and process gas stream. A barometric condenser effects condensation by direct contact between the coolant and process gas stream.

Construction: Commencement of onsite fabrication, erection, or installation of an emission source, air pollution control equipment, or a facility.

Control Device: Equipment (incinerator, adsorber, floating roof tanks, or the like) used to destroy or remove air pollutant(s) prior to discharge to the ambient air or to prevent air pollutants from reaching the ambient air.

Day: A 24-hour period beginning at midnight.

Director: The Executive Director and Chief Executive Officer of the Agency.

Emission: The release or discharge, whether directly or indirectly, of any air pollutant into the ambient air from any source.

Facility: Any building, structure, installation, activity, or combination thereof which contains a stationary source of air contaminants.

Incinerator: A combustion apparatus designed for high temperature operation in which solid, semisolid, liquid, or gaseous combustible wastes are ignited and burned efficiently and from which the solid and gaseous residues contain little or no combustible material.

Lower Explosive Limit: (also denoted as LEL) The lower limit of flammability of a gas or vapor at ordinary ambient temperatures expressed in percent of the gas or vapor in air by volume.

Organic Material: A chemical compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

Oven: A chamber within which heat is used to bake, cure, polymerize, and/or dry a surface coating.

Overall Emission Reduction Efficiency: The weight per unit time of VOC removed by a control device divided by the weight per unit time of VOC emitted by a source, expressed as a percentage.

Owner or Operator: Any person who owns, leases, controls, operates or supervises a facility, an emission source, or air pollution control equipment.

Person: Any individual, partnership, copartnership, firm, company, corporation, association, joint stock company, trust, estate, political subdivision, or any other legal entity, or their legal representative, agency or assigns.

Reasonably Available Control Technology: (also denoted as RACT) means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. It may require technology that has been applied to similar, but not necessarily identical, source categories.

Reid Vapor Pressure: The absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases as determined by American Society for Testing and Materials, Part 17, 1973, D-323-72 (Reapproved 1977).

Shutdown: The cessation of operation of a source or of emission control or emission monitoring equipment.

Solvent: Organic materials which are liquid at standard conditions and which are used as dissolvers, viscosity reducers, or cleaning agents.

Source: Any article, container, machine, process equipment, or other contrivance from which air pollutants emanate or are emitted, either directly or indirectly.

Standard Conditions: A temperature of 20°C (68°F) and pressure of 760 millimeters of mercury (29.92 in. of mercury).

Startup: The setting in operation of a source or of emission control or emission monitoring equipment.

Technological Infeasibility: Technologically incapable of being accomplished or carried out as a matter of practicality; technically impracticable rather than technically impossible.

True Vapor Pressure: The equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss from Floating Roof Tanks," 1962.

Volatile Organic Compound: (also denoted as VOC), any organic compound which participates in atmospheric photochemical reaction or is measured by the applicable reference methods specified under any subpart of 40 CFR 60.

PART II

SPECIFIC PROVISIONS

§XX.9000 PETROLEUM REFINERY EQUIPMENT LEAKS

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§XX.9010 *Definitions.*

(a) For the purpose of this Regulation, the general definitions apply.

(b) For the purpose of this Regulation, the following definitions also apply:

(1) "Petroleum refinery" means any facility engaged in producing gasoline, aromatics, kerosene, distillate fuel oils, residual fuel oils, lubricants, asphalt, or other products through distillation of petroleum or through redistillation, cracking, rearrangement or reforming of unfinished petroleum derivatives.

(2) "Component" means any piece of equipment which has the potential to leak volatile organic compounds when tested in the manner described in §XX.9050. These sources include, but are not limited to, pumping seals, compressor seals, seal oil degassing vents, pipeline valves, flanges and other connections, pressure relief devices, process drains, and open ended pipes. Excluded from these sources are valves which are not externally regulated.

(3) "Liquid service" means equipment which processes, transfers or contains a volatile organic compound or mixture of volatile organic compounds in the liquid phase.

(4) "Gas service" means equipment which processes, transfers or contains a volatile organic compound or mixture of volatile organic compounds in the gaseous phase.

(5) "Valves not externally regulated" means valves that have no external controls, such as in-line check valves.

(6) "Refinery unit" means a set of components which are a part of a basic process operation, such as, distillation, hydrotreating, cracking or reforming of hydrocarbons.

§*XX.9020* *Applicability:*

This Regulation applies to all petroleum refineries located in the following counties:

DISCUSSION

This regulation is intended to cover all petroleum refineries, including topping plants, regardless of size. The regulation is not intended to affect facilities which recycle waste oil.

§XX.9030 *Provisions for Specific Processes.*

(a) *The owner or operator of a petroleum refinery complex subject to this regulation shall:*

  (1) *Develop a monitoring program consistent with the provisions in §XX.9040(a).*

  (2) *Conduct a monitoring program consistent with the provisions in §XX.9060(a).*

  (3) *Record all leaking components which have a VOC concentration exceeding 10,000 ppm when tested according to the provisions in §XX.9050, and place an identifying tag on each component consistent with the provisions in §XX.9060(a)(3).*

  (4) *Repair and retest the leaking components, as defined in part (3), as soon as possible but no later than 15 days after the leak is found.*

  (5) *Identify all leaking components, as defined in part (3), which cannot be repaired until the unit is shutdown for turnaround.*

(b) *The Director at his discretion may require early unit turnaround based on the number and severity of tagged leaks awaiting turnaround.*

(c) *Except for safety pressure relief valves, no owner or operator of a petroleum refinery shall install or operate a valve at the end of a pipe or line containing volatile organic compounds unless the pipe or line is sealed with a second valve, a blind flange, a plug, or a cap. The sealing device may be removed only when a sample is being taken or during maintenance operations.*

(d) *Pipeline valves and pressure relief valves in gaseous volatile organic compound service shall be marked in some manner that will be readily obvious to both refinery personnel performing monitoring and the Director.*

DISCUSSION

The 15-day repair period should allow sufficient time for a leaking component to be included in the normal maintenance schedule for most facilities. The 15-day period was included in the CTG document which the petroleum industry was given an opportunity to review. No objections were raised to the repair period at that time.

Part (d) of this section of the regulation is included to identify those valves which must be monitored quarterly under the provisions of §XX.9060(a)(1)(ii). If the Director determines that too many leaking components are being designated for repair at a unit turnaround, he may order an early turnaround.

§XX.9040 Compliance Schedules.

The owner or operator of a petroleum refinery, in order to comply with §XX.9030, shall adhere to the increments of progress contained in the following schedule:

(a) Submit to the Director a monitoring program by January 15, 1981. This program shall contain, at a minimum, a list of the refinery units and the quarter in which they will be monitored, a copy of the log book format, and the make and model of the monitoring equipment to be used. In no case shall a monitoring contract relieve the owner or operator of a petroleum refinery of the responsibility for compliance with this regulation.

(b) Submit the first quarterly monitoring report to the Director by July 15, 1981.

DISCUSSION

The first milestone in a compliance schedule should be a submittal by the refinery owner or operator which contains a monitoring program. Processing areas of the refinery can be broken out and monitored separately. A list of the units which will be monitored and reported on the given dates must also be presented. The four quarterly reports should be filed on January 15, April 15, July 15, and October 15. For those components which must be monitored yearly, a schedule should be established outlining which fraction will be monitored within a particular quarter. The resulting monitoring report should be submitted on the four dates previously mentioned.

Pump seals, pipeline valves in liquid service, and process drains must be monitored yearly. For example, assume that the refinery has four basic processing operations: distillation, hydrotreating, cracking, and reforming. The operator could choose to monitor all the pump seals, pipeline valves in liquid service and process drains in the distillation area in the first quarter and report the results by April 15. He may then monitor similar equipment in the hydrotreating area in the second quarter and report the results by July 15. The following year, the operator would again monitor the distillation area in the first quarter. This schedule would insure that monitoring is being accomplished at a uniform rate throughout the calendar year.

The important issue is that a schedule be formulated by the refinery personnel and submitted to the regulatory agency for review. After implementation of the regulations, 6 months should be allowed to formulate a monitoring schedule and purchase monitoring equipment. The first monitoring report should be due 6 months later.

§XX.9050 *Testing and Monitoring Procedures.*

(a) Testing and calibration procedures to determine compliance with this regulation must be consistent with Appendix B of the OAQPS Guideline Series document, "Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment," EPA-450/2-78-036.

DISCUSSION

Two monitoring procedures are presented in Appendix B of the CTG document. The first is the Individual Source Survey. This is the most severe method and requires the inspection of every seal and valve in the entire petroleum refinery complex. The second is the Unit Area Survey and requires a "walkthrough" with a VOC monitor. If the ambient VOC level is above an "action level" (which is not defined here), an Individual Source Survey is performed in the specific area only. The action level can be determined by comparison of area survey VOC levels and Individual Source Survey VOC levels.

It is important that the burden of proof of the effectiveness of alternative test procedures be put on the refinery personnel. One suggestion is to require that the refinery personnel present data for testing done by the Individual Source Survey method and for testing done by the proposed alternative method for similar operating installations. The regulatory agency could then compare the number of leaking components discovered as a fraction of the number of potential leaking sources for both methods and also against the data collected by EPA in the CTG document. This gives the regulatory agency a method to assess the stringency of the emission limit.

It is EPA policy that the SIP revision must include a legally enforceable limitation, with associated test methods specifically designated. Any language which leaves the test method completely to the discretion of the Director is unacceptable. Minor changes to designated test methods would be approved, however.

In order to better understand the complexities and problems of the test methods, a regulatory agency representative familiar with testing equipment should be present during some of the first surveys.

§XX.9060 Monitoring, Recordkeeping, Reporting

(a) Monitoring

(1) The owner or operator of a petroleum refinery subject to this regulation shall conduct a monitoring program consistent with the following provisions:

(i) Monitor yearly by the methods referenced in §XX.9050, all

(A) pump seals;

(B) pipeline valves in liquid service; and

(C) process drains.

(ii) Monitor quarterly by the methods referenced in §XX.9050, all

(A) compressor seals;

(B) pipeline valves in gaseous service; and

(C) pressure relief valves in gaseous service.

(iii) Monitor weekly by visual methods all pump seals;

(iv) Monitor immediately any pump seal from which liquids are observed dripping;

(v) Monitor any relief valve within 24 hours after it has vented to the atmosphere; and

(vi) Monitor immediately after repair any component that was found leaking.

(2) Pressure relief devices which are connected to an operating flare header, vapor recovery device, inaccessible valves, storage tank valves, and valves that are not externally regulated are exempt from the monitoring requirements in paragraph (1) of this section.

(3) The owner or operator of a petroleum refinery, upon the detection of a leaking component, as defined in §XX.9030(a)(3), shall affix a weatherproof and readily visible tag, bearing an identification number and the date the leak is located, to the leaking component. This tag shall remain in place until the leaking component is repaired.

(b) Recordkeeping

(1) The owner or operator of a petroleum refinery shall maintain a leaking components monitoring log as specified in §XX.9030(a)(3) which shall contain, at a minimum, the following data:

(i) The name of the process unit where the component is located.

(ii) The type of component (e.g., valve, seal).

(iii) The tag number of the component.

(iv) The date on which a leaking component is discovered.

(v) The date on which a leaking component is repaired.

(vi) The date and instrument reading of the recheck procedure after a leaking component is repaired.

(vii) A record of the calibration of the monitoring instrument.

(viii) Those leaks that cannot be repaired until turnaround.

(ix) The total number of components checked and the total number of components found leaking.

(2) Copies of the monitoring log shall be retained by the owner or operator for a minimum of 2 years after the date on which the record was made or the report prepared.

(3) Copies of the monitoring log shall immediately be made available to the Director, upon verbal or written request, at any reasonable time.

(c) Reporting

(1) The owner or operator of a petroleum refinery, upon the completion of each yearly and/or quarterly monitoring procedure, shall:

(i) Submit a report to the Director by the 15th day, of January, April, July, and October that lists all leaking components that were located during the previous 3 calendar months but not repaired within 15 days, all leaking components awaiting *unit turnaround, the total number of components inspected and the total number of components found leaking.*

(ii) *Submit a signed statement with the report attesting to the fact that, with the exception of those leaking components listed in subparagraph (c)(1)(i) all monitoring and repairs were performed as stipulated in the monitoring program.*

(d) *The Director, upon written notice, may modify the monitoring, recordkeeping and reporting requirements.*

DISCUSSION

Before the owner or operator of a refinery can meet the requirements of this regulation, he must purchase one or more portable VOC monitors. Also, since in most petroleum refineries the only valves that are tagged are the control valves, the owner or operator must identify every gaseous service pipeline valve, as requred by §XX.9030(d).

With the preliminaries accomplished, the VOC monitoring team must prepare a schedule such that pump seals, pipeline valves in liquid service, and process drains are monitored yearly; compressor seals, pressure valves in gas service and pressure relief valves in gas service are monitored quarterly; and pump seals are visually monitored weekly. No individual monitoring is required for pipeline flanges and pressure relief valves in liquid service. Whenever liquids are observed dripping from a pump seal, the seal should be checked immediately with a portable VOC monitor. Also, upon the venting of any relief valve to atmosphere, that component should be checked with a monitor.

In order for the regulatory agency to insure monitoring is properly accomplished, a log must be maintained. Time must be spent maintaining this document, possibly as a computer application. The CTG recommends that the survey log be retained for 2 years after the inspection is completed. The state or local agency should choose a period of time sufficient to document the equivalency of proposed alternative test methods and to complete any enforcement action.

When a leak is located, a weatherproof and readily visible tag bearing an identification number and the date the leak is located must be affixed to the leaking component. The owner or operator of the refinery then has 15 days to repair the leak.

After each quarterly and annual monitoring has been performed, the refinery operator should submit a report to the Director listing only the leaks that were located, but not repaired within the required time limit and those leaks awaiting turnaround. Also, the refinery operator should submit a signed statement attesting to the fact that all monitoring and repairs were performed as stipulated. This is a reasonable approach from the regulatory agency's point since it reduces the work load in order to concentrate on those sources that were not in compliance. Since the regulation also states that the leaking component monitoring log will be made available to the Director upon verbal or written request at any reasonable time, the agency can perform spot checks on the survey log to determine whether the monitoring program is being properly conducted. A point that should not be overlooked is that the leaking source, once repaired, should be monitored and the results recorded.

Due to the obvious fact that there are shortcomings in the establishment of a monitoring schedule, the CTG recommends that the regulations be written to allow for modifications in the monitoring schedule where it is proven to be either inadequate or excessive. Therefore, a paragraph is included that will provide the Director with the legal right to modify the monitoring, recordkeeping, and reporting requirements. Also, a paragraph is included in the Petition for Alternative Controls Section (§XX.9070) to allow the owner or operator of the refinery to request modifications. On the other hand, if the air pollution control officer finds an excessive number of leaks during any inspection, he may require more frequent monitoring.

The point to be made here is that the establishment of an effective monitoring schedule will probably require some give and take from both the regulatory agency and the refinery. A considerable amount of judgment will be required.

§XX.9070 *Petition for Alternative Controls.*

(a) If, at any time after two complete liquid service inspections and five complete gaseous service inspections, the owner or operator of a petroleum refinery can demonstrate that modifications to §XX.9060 are in order, he may petition to the Director that revisions be made.

(b) The petition of paragraph (a) of this section must contain:

  (1) the name and address of the company and the name and telephone number of the responsible company representative over whose signature the petition is submitted;

  (2) a detailed description of the problems encountered by implementing §XX.9060; and,

  (3) a detailed description of the proposed alternative monitoring procedure.

(c) If at any time the owner or operator of a petroleum refinery can demonstrate that compliance with §XX.9030 would require more than leaking component repair or equipment changeout, he may petition the Director to allow the use of alternative operational and/or equipment controls for the reduction of volatile organic emissions.

(d) The petition of paragraph (c) of this section must be made for each component within a given facility, and must contain:

  (1) the name and address of the company and the name and telephone number of the responsible company representative over whose signature the petition is submitted;

  (2) a description of all operations conducted at the location to which the petition applies and the purpose that the volatile organic compound emitting component serves within the operations;

  (3) a detailed description of the proposed alternative operational and/or equipment controls; and,

(4) a schedule for the installation and/or institution of the alternative operational and/or equipment controls.

(e) The Director may approve a Petition for Alternative Control if the petition is submitted in accordance with paragraph (d) of this section.

DISCUSSION

The wording in paragraphs (a) and (b) of this section is similar to what appears in the CTG document. The phrase "two complete liquid service inspections and five complete gaseous service inspections" is a clarification of the phrase, "after over 1 year of monitoring" which appears on page 6-4 of the CTG document.

As stated in the CTG, there are sources that may need to be isolated from the process in order to be repaired. This procedure may be difficult for some equipment; especially compressors that do not have spares and valves that cannot be isolated. For these and possibly other sources, it may be necessary to have a partial or complete unit shutdown to repair the leak. Since a unit shutdown may create more emissions than the repair eliminates, these sources need not be repaired until the necessary shutdown occurs, such as a scheduled unit turnaround. These components must be identified in the leaking component monitoring log and in the quarterly report submitted to the Director.

In certain instances, more than simple or unit shutdown repairs will be necessary to bring a leaking component into compliance. This can be true for some pump or compressor seals or for drain systems. It may be necessary to modify or replace the whole pump or compressor seal system or to modify the underground drain pipes. Sources such as this, where the leak cannot be repaired by maintenance or equipment changeout, should be addressed individually by the air pollution control agency, taking into account both the potential emission reduction and the cost and technical feasibility of bringing such a source into compliance with the concentration limit.

This alternative situation can be handled by paragraph (c) under Petition for Alternative Controls. If the owner or operator can demonstrate that compliance with the Provisions for Specific Processes would be technologically infeasible, he may petition for alternative control. Since the operator may reach his conclusion after a series of repair failures or after the addition of new process equipment, there should not be a time limit for petitioning. In other words, the operator should be allowed to petition for alternative control whenever he feels it is appropriate. Since VOC leaks can be estimated, the petitioner may be required to present figures which show the magnitude of the emission reduction. It will be the responsibility of the regulatory agency to determine whether the alternative control is effective.

Both industry and the State and local regulatory agencies should be aware that a Petition for Alternative Controls may be a revision of the SIP and, as such, would require EPA approval.

§XX.9100 SURFACE COATING OF MISCELLANEOUS METAL PARTS AND PRODUCTS

§XX.9110 Definitions.

(a) For the purpose of this Regulation, the general definitions apply.

(b) For the purpose of this Regulation, the following definitions also apply:

(1) "Single coat" means one film of coating applied to a metal surface;

(2) "Prime coat" means the first of two or more films of coating applied to a metal surface;

(3) "Topcoat" means the final film or series of films of coating applied in a two-coat (or more) operation;

(4) "Low solvent coating" means coatings which contain less organic solvent than the conventional coatings used by the industry. Low solvent coatings include water-borne, higher solids, electrodeposition and powder coatings;

(5) "Heat sensitive material" means materials which cannot consistently be exposed to temperatures greater than 95°C (203°F);

(6) "Transfer efficiency" means the portion of coating solids which adheres to the metal surface during the application process, expressed as a percentage of the total volume of coating solids delivered by the applicator;

(7) "Air dried coating" means coatings which are dried by the use of air or forced warm air at temperatures up to 90°C (194°F);

(8) "Clear coat" means a coating which lacks color and opacity or is transparent and uses the undercoat as a reflectant base or undertone color;

(9) "Extreme performance coatings" means coatings designed for harsh exposure or extreme environmental conditions;

(10) "Coating application system" means all operations and equipment which applies, conveys, and dries a surface coating, including, but not limited to, spray booths, flow coaters, flashoff areas, air dryers and ovens; and

(11) "Extreme environmental conditions" means, exposure to any of; the weather all of the time, temperatures consistently above 95°C, detergents, abrasive and scouring agents, solvents, corrosive atmospheres, or similar environmental conditions.

DISCUSSION

A certain amount of judgment must be exercised in categorizing specific coatings as a "clear coat" or an "extreme performance coating." Clear coats are intended to be those coatings which allow the underlying coating or material to be seen. However, these coatings may have a certain amount of opaqueness. Extreme performance coatings are intended to be those coatings that are designed to meet any one of the "extreme environmental conditions" given in definition (b)(11).

The air dried coating definition is included to differentiate these coatings from oven dried coatings. The 90°C temperature is the upper limit that is generally used to increase the drying rate of air curable coatings.

§XX.9120 Applicability.

(a) This Regulation is applicable to surface coating of miscellaneous metal parts and products in the following counties:

Miscellaneous parts and products include:

(1) Large farm machinery (harvesting, fertilizing and planting machines, tractors, combines, etc.);

(2) Small farm machinery (lawn and garden tractors, lawn mowers, rototillers, etc.);

(3) Small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.);

(4) Commercial machinery (office equipment, computers and auxiliary equipment, typewriters, calculators, vending machines, etc.);

(5) Industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.);

(6) Fabricated metal products (metal covered doors, frames, etc.); and

(7) Any other industrial category which coats metal parts or products under the Standard Industrial Classification Code of Major Group 33 (primary metal industries), Major Group 34 (fabricated metal products), Major Group 35 (nonelectric machinery), Major Group 36 (electrical machinery), Major Group 37 (transportation equipment), Major Group 38 (miscellaneous instruments), and Major Group 39 (miscellaneous manufacturing industries).

(b) This Regulation is not applicable to the surface coating of the following metal parts and products:

(1) automobiles and light-duty trucks;

(2) metal cans;

(3) flat metal sheets and strips in the form of rolls or coils;

(4) magnet wire for use in electrical machinery;

(5) metal furniture;

(6) large appliances;

(7) exterior of airplanes;

(8) automobile refinishing;

(9) customized top coating of automobiles and trucks, if production is less than 35 vehicles per day; and,

(10) exterior of marine vessels.

(c) This Regulation applies to the application area(s), flashoff area(s), air and forced air drier(s), and oven(s) used in the surface coating of the metal parts and products in part (a). This regulation also applies to prime coat, top coat, and single coat operations.

DISCUSSION

This section defines the category of "miscellaneous metal parts and products." This section is based on the "List of Industrial Categories Covered" table in the CTG. Major Groups 40 and 41 of the SIC Code are not included in this regulation because further investigation has indicated that little or no surface coating is done by these industries. Paragraph (b) of this section of the regulation is included to clarify the extent of the regulation. Parts (b)(1) through (b)(6) are addressed in previous RACT regulatory guidance (EPA-905/2-78-001) and are, therefore, excluded from this regulation. Exterior coatings on airplanes and marine vessels are high performance coatings which are applied under conditions that are not easily controlled. However, parts for the exterior of airplanes and marine vessels that are coated as a separate manufacturing or coating operation are intended to be covered by this regulation. Automobile refinishing and the customized top coatings of less than 35 automobiles and trucks per day are not included because of: (1) the numerous small sources involves, (2) the fact that the operations are different than those generally addressed by this regulation, and (3) the difficulty of controlling the emissions from the small sources.

This regulation is intended to control the bulk of the metal coating operations. However, it is not intended to include categories of special military, scientific or experimental coatings.

Question:	Should there be a size exemption different from the general exemption for sources emitting less than 15 lb/day of VOC?
Answer:	California has rules which are slightly different that those suggested in this regulation. However, based on California specific information, it has been found that exempting sources emitting less than 20 lb/day omits 45 percent of the sources subject to the California regulation and the regulation is still applicable to more than 95 percent of the potential emissions.

§XX.9130 Provisions for Specific Processes.

(a) No owner or operator of a facility engaged in the surface coating of miscellaneous metal parts and products may operate a coating application system subject to this regulation that emits VOC in excess of:

(1) 0.52 kg/l (4.3 lb/gal) of coating, excluding water, delivered to a coating applicator that applies clear coatings;

(2) 0.42 kg/l (3.5 lb/gal) of coating, excluding water, delivered to a coating applicator in a coating application system that is air dried or forced warm air dried at temperatures up to $90^{\circ}C$ ($194^{\circ}F$);

(3) 0.42 kg/l (3.5 lb/gal) of coating, excluding water, delivered to a coating applicator that applies extreme performance coatings; and,

(4) 0.36 kg/l (3.0 lb/gal) of coating, excluding water, delivered to a coating applicator for all other coatings and coating application systems.

(b) If more than one emission limitation in paragraph (a) applies to a specific coating, then the least stringent emission limitation shall be applied.

(c) All VOC emissions from solvent washings shall be considered in the emission limitations in paragraph (a), unless the solvent is directed into containers that prevent evaporation into the atmosphere.

(d) The emission limits set forth in paragraph (a) shall be achieved by:

(1) the application of low solvent coating technology;

(2) an incineration system which oxidizes at least 90.0 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) to carbon dioxide and water; or,

(3) an equivalent means of VOC removal. The equivalent means must be certified by the owner or operator and approved by the Director.

(e) A capture system must be used in conjunction with the emission control systems in part (d)(2). The design and operation of a capture system must be consistent with good engineering practice, and shall be required to provide for an overall VOC emission reduction efficiency of at least 80 percent.

DISCUSSION

The emission limitations in this section of the regulation are based on the information given in Chapter 4 of the "Surface Coating of Miscellaneous Metal Parts and Products," EPA-450/1-78-015. The CTG document gave two additional categories, which are:

1. Frequent color change and/or large number of colors applied, or first coat on untreated ferrous substrate - 0.36 kg/l emission limit; and,

2. Powder Coatings - 0.05 kg/l emission limit.

The "frequent color change...." category has been included with part (a)(4), because it has the same emission limitation. The powder coatings category was also included in the "all other coatings" part (a)(4) as an incentive to use powder coatings. A facility which converts a coating line to powder coatings may use the difference between the actual emissions from the powder coatings and the emission limitation as an internal offset.

In paragraph (d) the stipulation is made that, if an incinerator is used, 90 percent of the VOC entering the device must be oxidized to H_2O and CO_2. This requirement assures that the incinerator is not simply oxidizing large molecular weight organic compounds to smaller molecular weight organics which would still participate in oxidant formation. The equivalent means of VOC removal may be an alternative control device, such as an adsorber or condenser. However, a combination of lower solvent usage and a lower efficiency control device is also acceptable.

Emissions from purging of spray guns were not considered when developing the emission limitations in this section. However, since they are controllable, they should be included in a determination of compliance. Their inclusion in a compliance determination raises three issues, however: (1) what method can be used to factor these emissions into a compliance determination; (2) are these emissions of a quantity large enough to require a separate emission limitation; (3) are these emissions of a quantity small enough to be of no concern? EPA recommends that these be ignored if solvent washings and purging of spray guns are directed into essentially closed containers. If the emissions are uncontrolled, they should be attributed to the coating.

Question: Is the coating of hardware for wood and metal cabinets covered in this CTG category?

Answer: Yes. Even though the language in the Metal Furniture coating CTG, EPA-450/2-77-032 (page iii), suggests that the coating of hardware for wood and metal cabinets could be included in that CTG category, that is not EPA's intent. The coating of hardware is covered by the emission limits in the Miscellaneous Metal Parts and Products CTG.

Question: Is the coating of metal pails and drums covered by the can coating CTG or by the miscellaneous metal coating CTG?

Answer: This industry is covered by the miscellaneous metal coating CTG. The can coating emission limits were based on high speed, high volume can manufacturing and coating process. Metal pails and drums are generally made of heavier gauge material and have larger capacity than cans. This results in pails and drums usually being manufactured and coated at a slower rate and lower volume than cans.

§XX.9140 *Compliance Schedules.*

(a) The owner or operator of a source of volatile organic compounds subject to this regulation shall meet the applicable increments of progress in the following schedules:

(1) Sources utilizing low solvent content coatings to comply with the emission limitations in §XX.9130 shall:

(i) Submit final plans for the application of low solvent technology before October 15, 1980;

(ii) Complete evaluation of product quality and commercial acceptance before April 1, 1981;

(iii) Issue purchase orders or contracts for low solvent content coatings before June 1, 1981;

(iv) Initiate process modifications before July 1, 1981; and,

(v) Complete process modifications and begin use of low solvent content coatings before July 1, 1982.

(2) Sources utilizing process equipment changes or add-on control devices, including incineration with heat recovery, to comply with the emission limitations shall:

(i) Submit final plans for the emission control system, or process equipment, or both, before October 15, 1980;

(ii) Award contracts or purchase orders for the emission control systems, or process equipment, or both, before December 15, 1980;

(iii) Initiate onsite construction or installation of the emission control system, or process equipment, or both, before June 1, 1981;

(iv) Complete onsite construction or installation of the emission control system or process equipment, or both, before June 1, 1982; and,

(v) Achieve final compliance, determined in accordance with §XX.9150, before July 1, 1982.

(3) Sources utilizing incineration without heat recovery or process modifications not requiring purchase orders, to comply with the emission limitations in §XX.9130, shall:

(i) Submit final plans for the emission control system or process modification, or both, before September 15, 1980;

(ii) Award contracts or purchase orders for the the emission control system or process modification, or both, before November 1, 1980;

(iii) Initiate onsite construction or installation of the emission control system or process modification, or both, before January 15, 1981;

(iv) Complete onsite construction or installation of the emission control system or process modification, or both, before May 15, 1981; and,

(v) Achieve final compliance, determined in accordance with §XX.9150, before July 1, 1981.

(b) The owner or operator of a source of volatile organic compounds subject to this regulation may submit to the Director, and the Director may approve, a proposed alternative compliance schedule provided:

(1) the proposed alternative compliance schedule is submitted before September 15, 1980;

(2) the owner or operator provides information showing the need for an alternative schedule;

(3) the alternative compliance schedule contains increments of progress;

(4) sufficient documentation and certification from appropriate suppliers, contractors, manufacturers, or fabricators is submitted by the owner or operator of the volatile organic compound source to justify the dates proposed for the increments of progress; and,

(5) Final compliance is achieved as expeditiously as possible and before the photochemical oxidant attainment date.

(c) The owner or operator of a volatile organic compound source subject to a compliance schedule of this section shall certify to the Director within 5 days after the deadline for each increment of progress, whether the required increment of progress has been met.

DISCUSSION

According to the EPA memorandum of November 3, 1978, on "Categorical Compliance Schedules for VOC Sources," a 2-year compliance schedule is recommended for carbon absorption, incineration with heat recovery and low-solvent technology. A 1-year compliance schedule is recommended for incineration without heat recovery. Assuming July 1, 1980 as the effective day of the regulation, the following progress increments would be required:

	Compliance date	
Progress increment	Incineration without heat recovery	Carbon adsorption, incineration with heat recovery
1. Control Plan Submitted	September 15, 1980	October 15, 1980
2. Contract Award	November 1, 1980	December 15, 1980
3. Initiation of Construction	January 15, 1981	June 1, 1981
4. Construction Completed	May 15, 1981	June 1, 1982
5. Final Compliance	July 1, 1981	July 1, 1982

Part (a)(1) of this section of the regulation is not completely consistent with the categorical compliance schedules. The wording has been changed slightly to be more relevant to the application of low-solvent technology. In addition, the date in part (a)(1)(ii) has been changed to April 1, 1981 to allow sufficient time for product quality and commercial acceptance testing. Part (a)(1) of this section is primarily for owners and operators of sources which are intending to use existing low-solvent technology. Owners or operators of VOC sources intending to develop new low-solvent coatings are most likely to submit a schedule consistent with part (b) of this section.

Allowance for Alternative Compliance Schedules is included as paragraph (b) of this section. The owner or operator of the emission source should be able to submit a proposed alternative schedule to the Director for review as long as it is presented before September 15, 1980, and it is properly documented. The Director must be able to approve a separate schedule for any source if he finds that compliance with paragraph (a) is not feasible.

EPA states, however, that "if such an alternative compliance schedule would impact on attainment or maintenance of any ambient standards, then approval of the alternative compliance schedule as an SIP revision would be required....Too many alternative schedules extending until December 31, 1982, might also prevent a state from showing reasonable further progress toward attainment..."

§XX.9150 Testing and Monitoring.

(a) Upon request of the Director, the owner or operator of a volatile organic compound source required to comply with this regulation shall, at his own expense, demonstrate compliance by the methods of part (c) of this section, or an alternative method approved by the Director. All tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing.

(b) A person proposing to conduct a volatile organic compound emissions test shall notify the Director of the intent to test not less than 30 days before the proposed initiation of the tests so the Director may at his option observe the test. The notification shall contain the information required by, and be in a format approved by, the Director.

(c) (1) Test procedures to determine compliance with §XX.9130 must be approved by the Director and be consistent with:

(i) EPA Guideline Series document, "Measurement of Volatile Organic Compounds," EPA-450/2-78-041; and,

(ii) Appendix A of "Control of Volatile Organic Emissions from Existing Stationary Sources - Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks," EPA-450/2-77-008.

(2) The Director may accept, instead of the coating analysis required in part (c)(1)(ii) of this paragraph, a certification by the manufacturer of the composition of the coatings, if supported by actual batch formulation records.

(d) If add-on control equipment is used, continuous monitors of the following parameters shall be installed, periodically calibrated, and operated at all times that the associated control equipment is operating:

(1) exhaust gas temperature of all incinerators;

(2) temperature rise across a catalytic incinerator bed;

(3) breakthrough of VOC on a carbon adsorption unit; and,

(4) any other continuous monitoring or recording device required by the Director.

DISCUSSION

Low solvent coating technology: In order to determine the quantity of VOC contained in a liter of coating for comparison to the limitations in §XX.9130, the procedures described in Appendix A of the CTG document on surface coating, EPA-450/2-77-008, (referenced in §XX.9150 (c)(1)(ii)) should be used. Certification by a manufacturer, vendor or user of a coating, of the results of the test procedure should be sufficient for a determination of compliance in most cases.

Conversion of organic carbon to VOC: The results of the methods in the "Measurement of Volatile Organic Compounds" document, EPA-450/2-78-041, are expressed as a mass concentration of organic carbon. In order to convert these results to a percent reduction by weight or to a mass rate of emission reduction several situations must be considered.

In situations where only a single organic compound is being controlled, the organic carbon weight is directly convertable to VOC weight by using the molecular weight of the compound. In this case the percent reduction in mass concentration of carbon across a control device is identical to the percent reduction of VOC by weight.

In many situations a mixture of organic compounds enter a control device. If two assumptions can be made: (1) that the relative concentrations of the compounds do not change across the control device (i.e., a specific compound is not selectively absorbed or adsorbed); and (2) the relative concentrations of compounds can be estimated from the conditions existing at the source of the VOC emissions; then a weighted average of the mass of carbon as a percent of the total weight can be calculated and this factor can be used to calculate the weight of VOC represented by the mass concentration of organic carbon.

In situations where a mixture of organic compounds enter a control device and a mixture with different relative concentrations leaves the control device, the mass concentration of carbon cannot be converted without additional test methods. These methods must provide the relative concentrations of the inlet and outlet mixtures of VOC. Once the relative concentrations are known a factor can be calculated as in the above situation.

Additional test methods must also be used when measuring the emissions from incinerators, because the organic carbon concentration test method excludes CO and CO_2. Measurements of these compounds are necessary to determine the percent conversion to CO_2 and H_2O.

Measurement of volumetric flow rate can be accomplished with EPA Reference Methods 1 and 2, found in 40 CFR 60, Appendix A. The mass concentration multiplied by the volumetric flow rate will equal the mass flow rate of VOC. Once the mass flow rate is known at the inlet and at the outlet of a VOC emission control device, the percent reduction can be calculated. Two potential problems remain: (1) Methods 1 and 2 cannot be performed on small vents; and (2) the guideline series document, EPA-450/2-78-041, does not rigorously define the sampling procedure.

Add-on control equipment: The quantity of VOC in the coating should be determined first by using the procedures described in Appendix A of the CTG document on surface coating, EPA-450/2-77-008, (referenced in §XX.9150 (c)(1)(ii)). The uncontrolled VOC mass emission rate can be calculated from the composition of the coating and the rate of coating usage. Some procedure must be devised which includes the number of runs required and the time limit for each run for determining an average rate of coating usage. This is a weak point in the test procedure, since an "average rate of coating usage" is not defined. In most cases this rate of usage can be adequately determined by a source's record of coating consumption.

The mass rate of VOC emission reduction by the emission control device can be calculated by a combination of measuring the VOC mass concentration (consistent with the procedures in EPA-450/2-78-041) in the entrance and exit air streams along with the air flow measurements. The VOC emission reduction rate (kg/hr) should be subtracted from the uncontrolled VOC emission rate (kg/hr) and will result in the actual VOC emission rate (kg/hr). The actual emission rate should then be divided by the average volumetric rate of coating usage (l/hr) and will result in the quantity of VOC actually emitted per liter of coating (kg/l) for comparison to the limits of §XX.9130.

Monitoring instruments are recommended where add-on control equipment is used in order to insure that the VOC emission reduction efficiency remains at the level required for compliance with §XX.9130. All incinerators should be equipped with temperature indicators. Recorders should be required for larger installations. The temperature rise across a catalyst bed should be monitored continuously for catalytic incinerators and carbon adsorption bed breakthrough should be monitored on carbon adsorption units.

State and local agencies developing a regulation for this source category should give additional consideration to monitoring, recordkeeping and reporting requirements. Sample regulatory language for this type of provision can be found in §XX.8070 Monitoring, Recordkeeping and Reporting in Appendix A.

§XX.9160 Petition for Alternative Controls.

(a) The owner or operator of a source of volatile organic compounds subject to this regulation may petition the Director to allow the use of alternative operational and/or equipment controls for the reduction of volatile organic compound emissions. The petition must be submitted in writing to the Director before September 1, 1980, and must contain:

(1) the name and address of the company and the name and telephone number of a responsible company representative over whose signature the petition is submitted;

(2) a description of all operations conducted at the location to which the petition applies and the purpose the volatile organic compound emitting equipment serves within the operations;

(3) reference to the specific emission limitations in §XX.9130 for which alternative operational and/or equipment controls are proposed;

(4) a detailed description of the proposed alternative operational and/or equipment controls, the magnitude of volatile organic compound emission reduction which will be achieved, and the quantity and composition of volatile organic compounds which will be emitted if the alternative operational and/or equipment controls are instituted;

(5) a schedule for the installation and/or institution of the alternative operational and/or equipment controls in conformance with the appropriate compliance schedule section;

(6) certification that emissions of all other air contaminants from the subject facility are in compliance with or under a schedule for compliance with all applicable local, state and federal laws and regulations; and,

(7) all additional information, requested by the Director, necessary to determine whether the VOC emission reduction achieved by the alternative controls is equivalent to the emission reduction achieved by the applicable regulations.

(b) The Director may approve a Petition for Alternative Control if:

(1) the petition is submitted in accordance with paragraph (a) of this section;

(2) *all other air contaminant emissions from the subject facility are in compliance with, or under a schedule for compliance as expeditiously as practicable with, all applicable local, state, and federal regulations;*

(3) *the petition demonstrates that the aggregate VOC emissions from the affected operations will in no case be greater through application of the alternative control plan than would be permitted through conformance with the applicable VOC emission reduction regulations;*

(4) *the petition contains a compliance schedule for achieving and maintaining a reduction of volatile organic compound emissions as expeditiously as practicable, but no later than the compliance date that would be required under the applicable VOC emission reduction regulation; and,*

(5) *a nuisance condition will not result from operation of the source as proposed in the Petition.*

(c) *No alternative control plan is effective until it is submitted to and approved by the Administrator of the United States Environmental Protection Agency as a revision of the State Implementation Plan pursuant to Section 110(a)(3)(A) of the Clean Air Act.*

DISCUSSION

This section allows the owner or operator of a source of VOC subject to this regulation to use higher coating transfer efficiencies, powder coatings, or internal offsets to reduce the VOC emissions by at least as much as if the emission limitations in §XX.9130 were applied.

Question:	How should an appropriate baseline transfer efficiency be determined for a specific source?
Answer:	If the actual transfer efficiency of the existing coating operation at a specific source is typical of the industry or state-of-the-art, then that actual transfer efficiency would be baseline. If the actual transfer efficiency of the existing coating operation is less than what is typical for that operation in the industry, then the baseline transfer efficiency should be equal to the typical transfer efficiency for that operation in the industry. Additional information on transfer

efficiency appears in three letters between
Ransberg Corp. and EPA, which are reprinted
in the Graphic Arts section of Appendix B.

Internal offsets should be allowed if the owner or operator is able to reduce aggregate emissions to the level required by the emission limitations in §XX.9130. This is to encourage the use of powder coatings and similar extremely low VOC emitting coatings or operations. Certain powder coatings require a primer which is applied as a high solvent dip solution. This additional source of VOC should be considered when determining allowable offsets.

Enforceability is not expected to be jeopardized in this situation because the quantities of solvent consumed can be estimated from coating consumption rates and compared to source specific limits. It should be noted that any permits for alternative controls should specify that the conversion of a source to the use of powder coatings or low VOC coatings must be permanent. A more detailed discussion of internal offsets can be found in Appendix A - General Provisions, §XX.8060.

§XX.9200 MANUFACTURE OF VEGETABLE OIL

DISCUSSION

In June 1978, EPA published a Control Technique Guideline for the manufacture of vegetable oils, ("Control of Volatile Organic Emissions from Manufacture of Vegetable Oils," EPA-450/2-78-035). This guideline provides processing flow and technology information as well as guidance on the planning and analysis required for the control of VOC emissions at vegetable oil extraction facilities. At the time this document was published, EPA acknowledged that there were uncertainties about the testing methods. EPA also had a field testing program that was developing useful data in the area of testing and monitoring. Initial results from several scheduled field tests indicated that the measured data are significantly more variable than had been anticipated. Consequently, in a letter dated June 22, 1979 (see next page), EPA asked the States to defer any regulatory action for vegetable oil plants until after the field testing program is completed and all the data analyzed. It is anticipated that the testing program will be completed in mid-1980. Accordingly, a sample regulation for the control of VOC from vegetable oil processing plants is not included in this document. Additional information will be provided after the completion of the field testing program.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

DATE: JUN 22 1979

SUBJECT: Initial Results of Emission Testing of Volatile Organic Compounds from Vegetable Oils Manufacturing Operations

FROM: Walter C. Barber, Director
Office of Air Quality Planning and Standards (MD-10)

TO: Director, Air and Hazardous Materials Division, Regions I-X

As you are aware, in June 1978 EPA published a Control Techniques Guideline (CTG) for the manufacture of vegetable oils ("Control of Volatile Organic Emissions from Manufacture of Vegetable Oils," EPA-450/2-78-035, June 1978). That document stated that the regulatory guidelines were based on engineering calculations and that further verification of these emission levels would be made upon review of data developed in conjunction with New Source Performance Standard development.

Initial results from the first of several scheduled field tests indicate that the measured results are significantly more variable than originally anticipated. Accordingly, I have concluded that it would be prudent to defer regulatory action for vegetable oil plants until after the test program is completed this fall and all the data have been analyzed.

States should not be required to adopt rules for this CTG category during 1979. Further information will be provided on this matter after the completion of the field test program.

cc: Don Goodwin
Jack Farmer
Fred Porter
George Walsh

EPA Form 1320-6 (Rev. 3-76)

§XX.9300 SURFACE COATING OF FLAT WOOD PANELING

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§XX.9310 Definitions.

(a) For the purpose of this Regulation, the general definitions apply.

(b) For the purpose of this Regulation, the following definitions also apply:

(1) "Class II hardboard paneling finish" means finishes which meet the specifications of Voluntary Product Standard PS-59-73 as approved by the American National Standards Institute.

(2) "Hardboard" is a panel manufactured primarily from inter-felted ligno-cellulosic fibers which are consolidated under heat and pressure in a hot press.

(3) "Hardwood plywood" is plywood whose surface layer is a veneer of hardwood.

(4) "Natural finish hardwood plywood panels" means panels whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.

(5) "Thin particleboard" is a manufactured board ¼ inch or less in thickness made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure.

(6) "Printed interior panels" means panels whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.

(7) "Tileboard" means panelling that has a colored waterproof surface coating.

(8) "Coating application system" means all operations and equipment which apply, convey, and dry a surface coating, including, but not limited to, spray booths, flow coaters, conveyers, flashoff areas, air dryers and ovens.

§XX.9320 *Applicability.*

(a) *This Regulation applies to all flat wood manufacturing and surface finishing facilities, located in the counties of ________________________, that manufacture the following products:*

(1) *Printed interior panels made of hardwood plywood and thin particle board;*

(2) *Natural finish hardwood plywood panels; or,*

(3) *Hardboard paneling with Class II finishes.*

(b) *This Regulation does not apply to the manufacture of exterior siding, tileboard, or particleboard used as a furniture component.*

DISCUSSION

The emissions from inks used to print simulated grain or decorative patterns on printed interior panels are covered in this CTG category, and should not be considered a Graphic Arts activity.

§XX.9330 *Provisions for Specific Processes.*

(a) No owner or operator of a flat wood manufacturing facility subject to this regulation shall emit volatile organic compounds from a coating application system in excess of:

(1) 2.9 kg per 100 square meters of coated finished product (6.0 lb/1,000 sq ft) from printed interior panels, regardless of the number of coats applied;

(2) 5.8 kg per 100 square meters of coated finished product (12.0 lb/1,000 sq ft) from natural finish hardwood plywood panels, regardless of the number of coats applied; and,

(3) 4.8 kg per 100 square meters of coated finished product (10.0 lb/1,000 sq ft) from Class II finishes on hardboard panels, regardless of the number of coats applied.

(b) The emission limits in paragraph (a) of this section shall be achieved by:

(1) The application of low solvent content coating technology; or,

(2) An incineration system which oxidizes at least 90.0 percent of the nonmethane volatile organic compounds entering the incinerator (VOC measured as total combustible carbon) to carbon dioxide and water; or,

(3) An equivalent means of VOC removal. The equivalent means must be certified by the owner or operator and approved by the Director.

(c) A capture system must be used in conjunction with the emission control systems in parts (b)(2) and (b)(3). The design and operation of a capture system must be consistent with good engineering practice and shall be required to provide for an overall emission reduction sufficient to meet the emission limitations in paragraph (a) of this section.

(d) For Petition for Alternative Controls Section: see Discussion.

DISCUSSION

In the CTG the emission limitations are expressed as "kg of VOC per 100 square meters of coated surface." It is EPA's intent that the term "coated surface" be interpreted as "coated finished product." The emission limitations in this section of the regulation are expressed in a manner which allow increased transfer efficiency or reduced film thickness to be used as an equivalent control method. In addition, sources should be allowed to employ combinations of process modifications and control equipment to meet the emission limitations. This approach is similar to the "bubble" concept in that it allows sources to propose a control strategy which is most cost-effective for their particular operations. It is very important that, if several films of coating are applied, the aggregate emissions must meet the emission limitations of this section regardless of the control scheme used.

Except for incineration, capture and control efficiencies are not addressed. It should be assumed that all of the solvent that exists in the coatings evaporates into the atmosphere. The overall reduction in VOC emissions achieved by the capture and control devices must be sufficient to meet the emission limitations. If an incinerator is used, 90 percent of the nonmethane VOC by weight entering the device must be oxidized to H_2O and CO_2 to insure that the incinerator is not simply oxidizing large molecular weight organic compounds to smaller molecular weight organics which would still participate in oxidant formation.

It should be noted that Class II finishes referred to in part (a)(3) of this section are classified according to the system in Voluntary Product Standard PS-59-73 of the American National Standards Institute. This classification system is different from the one used for coating analysis in the guideline document referenced in §XX.9350(c)(1)(ii).

Even though this regulation allows a source some flexibility in choosing a cost-effective control strategy, more economically advantageous control strategies may be devised by the affected sources, if the Petition for Alternative Controls §XX.8060 in Appendix A, is incorporated into this regulation. Additional information on alternative controls and the "bubble concept" also appear in the discussion section following §XX.8060.

§XX.9340 Compliance Schedules.

(a) The owner or operator of a source of volatile organic compounds subject to this regulation shall meet the applicable increments of progress in the following schedules:

(1) Sources utilizing low solvent content coatings to comply with the emission limitations in §XX.9330 shall:

(i) Submit final plans for the application of low solvent technology before October 15, 1980;

(ii) Complete evaluation of product quality and commercial acceptance before April 1, 1981;

(iii) Issue purchase orders or contracts for low solvent content coatings before June 1, 1981;

(iv) Initiate process modifications before July 1, 1981; and,

(v) Complete process modifications and begin use of low solvent content coatings before July 1, 1982.

(2) Sources utilizing process equipment changes or add-on control devices, including incineration with heat recovery, to comply with the emission limitations in §XX.9330 shall:

(i) Submit final plans for the emission control system, or process equipment, or both, before October 15, 1980;

(ii) Award contracts or purchase orders for the emission control systems, or process equipment, or both, before December 15, 1980;

(iii) Initiate onsite construction or installation of the emission control system, or process equipment, or both, before June 1, 1981;

(iv) Complete onsite construction or installation of the emission control system or process equipment, or both, before June 1, 1982; and,

(v) Achieve final compliance, determined in accordance with §XX.9350, before July 1, 1982.

(3) Sources utilizing incineration without heat recovery or process modifications not requiring purchase orders, to comply with the emission limitations in §XX.9330, shall:

(i) Submit final plans for the emission control system or process modification, or both, before September 15, 1980;

(ii) Award contracts or purchase orders for the emission control system or process modification, or both, before November 1, 1980;

(iii) Initiate onsite construction or installation of the emission control system or process modification, or both, before January 15, 1981;

(iv) Complete onsite construction or installation of the emission control system or process modification, or both, before May 15, 1981; and,

(v) Achieve final compliance, determined in accordance with §XX.9350, before July 1, 1981.

(b) The owner or operator of a source of volatile organic compounds subject to this regulation may submit to the Director, and the Director may approve, a proposed alternative compliance schedule provided:

(1) the proposed alternative compliance schedule is submitted before September 15, 1980;

(2) the owner or operator provides information showing the need for an alternative schedule;

(3) the alternative compliance schedule contains increments of progress;

(4) sufficient documentation and certification from appropriate suppliers, contractors, manufacturers, or fabricators is submitted by the owner or operator of the volatile organic compound source to justify the dates proposed for the increments of progress; and,

(5) Final compliance is achieved as expeditiously as possible and before the photochemical oxidant attainment date.

(c) The owner or operator of a volatile organic compound source subject to a compliance schedule of this section shall certify to the Director within 5 days after the deadline for each increment of progress, whether the required increment of progress has been met.

DISCUSSION

According to the EPA memorandum of November 3, 1978, on "Categorical Compliance Schedules for VOC Sources," a 2-year compliance schedule is recommended for carbon adsorption and low-solvent technology. A 1-year compliance schedule is recommended for incineration without heat recovery. Assuming July 1, 1980, as the effective day of the regulation, the following progress increments would be required:

Progress increment	Compliance data: Incineration without heat recovery	Compliance data: Carbon adsorption low solvent technology
1. Control Plan Submitted	September 15, 1980	October 15, 1980
2. Control Award	November 1, 1980	December 15, 1980
3. Initiation of Construction	January 15, 1981	June 1, 1981
4. Construction Completed	May 15, 1981	June 1, 1982
5. Final Compliance	July 1, 1981	July 1, 1982

Part (a)(1) of this section of the regulation is not completely consistent with the categorical compliance schedules. The wording has been changed slightly to be more relevant to the application of low solvent technology. In addition, the date in part (a)(1)(ii) has been changed to April 1, 1981, to allow sufficient time for product quality and commerical acceptance testing. Part (a)(1) of this section is primarily for owners and operators of sources which are intending to use existing low solvent technology. Owners or operators of VOC sources intending to develop new low solvent coatings are most likely to submit a schedule consistent with part (b) of this section.

Allowance for Alternative Compliance Schedules is included as paragraph (b) of this section. The owner or operator of the emission source should be able to submit a proposed alternative schedule to the Director for review as long as it is presented before September 15, 1980, and it is properly documented. The Director must be able to approve a separate schedule for any source if he finds that compliance with paragraph (a) is not feasible.

EPA states, however, that "if such an alternative compliance schedule would impact on attainment or maintenance of any ambient standards, then approval of the alternative compliance schedule as an SIP revision would be required....Too many alternative schedules extending until December 31, 1982, might also prevent a state from showing reasonable further progress toward attainment..."

§XX.9350 *Testing and Monitoring.*

(a) Upon request of the Director, the owner or operator of a volatile organic compound source required to comply with this regulation shall, at his own expense, demonstrate compliance by the methods of part (c) of this section, or an alternative method approved by the Director. All tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing.

(b) A person proposing to conduct a volatile organic compound emissions test shall notify the Director of the intent to test not less than 30 days before the proposed initiation of the tests so the Director may at his option observe the test. The notification shall contain the information required by, and be in a format approved by, the Director.

(c) (1) Test procedures to determine compliance with §XX.9330 must be approved by the Director and be consistent with:

(i) EPA Guideline Series document, "Measurement of Volitile Organic Compounds," EPA-450/2-78-041; and,

(ii) Appendix A of "Control of Volatile Organic Emissions from Existing Stationary Sources - Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobile, and Light-Duty Trucks," EPA-450/2-77-008.

(2) The Director may accept, instead of the coating analysis required by part (c)(1)(ii) of this paragraph, a certification by the coating manufacturer of the composition of the coating, if supported by actual batch formulation records.

(d) If add-on control equipment is used, continuous monitors of the following parameters shall be installed, periodically calibrated, and operated at all times that the associated control equipment is operating:

(1) exhaust gas temperature of all incinerators;

(2) temperature rise across a catalytic incinerator bed;

(3) breakthrough of VOC on a carbon adsorption unit; and,

(4) any other continuous monitoring or recording device required by the Director.

DISCUSSION

Low solvent coating technology: In order to determine the quantity of VOC contained in a liter of coating for comparison to the limitations in §XX.9330, the procedures described in Appendix A of the CTG document on surface coating, EPA-450/2-77-008, (referenced in §XX.9350 (c)(1)(ii)) should be used. Certification by a manufacturer, vendor or user of a coating, of the results of the test procedure should be sufficient for a determination of compliance in most cases.

Conversion of Organic Carbon to VOC: The results of the methods in the "Measurement of Volatile Organic Compounds" document, EPA-450/2-78-041, are expressed as a mass concentration of organic carbon. In order to convert these results to a mass rate of VOC several situations must be considered.

In situations where only a single organic compound is being controlled, the organic carbon weight is directly convertable to VOC weight by using the molecular weight of the compound. In this case the percent reduction in mass concentration of carbon across a control device is identical to the percent reduction of VOC by weight.

In many situations a mixture of organic compounds enter a control device. If two assumptions can be made: (1) that the relative concentrations of the compounds do not change across the control device (i.e., a specific compound is not selectively absorbed or adsorbed); and (2) the relative concentrations of compounds can be estimated from the conditions existing at the source of the VOC emissions, then a weighted average of the mass of carbon as a percent of the total weight can be calculated and this factor can be used to calculate the weight of VOC represented by the mass concentration of organic carbon.

In situations where a mixture of organic compounds enter a control device and a mixture with different relative concentrations leaves the control device, the mass concentration of carbon cannot be converted without additional test methods. These methods must provide the relative concentrations of the inlet and outlet mixtures of VOC. Once the relative concentrations are known a factor can be calculated as in the above situation.

Additional test methods must also be used when measuring the emissions from incinerators, because the organic carbon concentration test method excludes CO and CO_2. Measurements of these compounds are necessary to determine the percent conversion to CO_2 and H_2O.

Add-on control equipment: The quantity of VOC in the coating should be determined first by using the procedures described in Appendix A of the CTG document on surface coating, EPA-450/2-77-008, (referenced in §XX.9350(c)(1)(ii)). The uncontrolled VOC mass emission rate can be calculated from the composition of the coating and the rate of coating usage. Some procedure must be devised which includes the number of runs required and the time limit for each run for determining an average rate of coating usage. This is a weak point in the test procedure, since an "average rate of coating usage" is not defined.

The mass rate of VOC emission reduction by the emission control device can be calculated by a combination of measuring the VOC mass concentration (consistent with the procedures in EPA-450/2-78-041) in the entrance and exit air streams along with the air flow measurements. The VOC emission reduction rate (kg/hr) should be subtracted from the uncontrolled VOC emission rate (kg/hr) and will result in the actual VOC emission rate (kg/hr). This figure should be divided by the production rate (square meters/hr) to obtain actual emissions in units of kg/square meter for comparison to the emission limitations in §XX.9330.

The "overall emission reduction efficiency" can then be calculated by:

$$\frac{\text{mass rate of VOC emission reduction}}{\text{uncontrolled mass emission rate}} \times 100 \text{ percent}$$

Monitoring instruments are recommended where add-on control equipment is used in order to insure that the VOC emission reduction efficiency remains at the level required for compliance with §XX.9330. All incinerators should be equipped with temperature indicators. Recorders should be required for larger installations. The temperature rise across a catalyst bed should be monitored continuously for catalytic incinerators and carbon adsorption bed breakthrough should be monitored on carbon adsorption units.

State and local agencies developing a regulation for this source category should give additional consideration to monitoring, recordkeeping and reporting requirements. Sample regulatory language for this type of provision can be found in §XX.8070 Monitoring, Recordkeeping and Reporting in Appendix A.

§XX.9400 MANUFACTURE OF SYNTHESIZED PHARMACEUTICAL PRODUCTS

§XX.9410 Definitions.

(a) For the purpose of this Regulation, the general definitions apply.

(b) For the purpose of this Regulation, the following definitions also apply:

(1) "Condenser" means a device which cools a gas stream to a temperature which removes specific organic compounds by condensation;

(2) "Control system" means any number of control devices, including condensers, which are designed and operated to reduce the quantity of VOC emitted to the atmosphere;

(3) "Reactor" means a vat or vessel, which may be jacketed to permit temperature control, designed to contain chemical reactions;

(4) "Separation operation" means a process that separates a mixture of compounds and solvents into two or more components. Specific mechanisms include extraction, centrifugation, filtration, and crystallization;

(5) "Synthesized Pharmaceutical Manufacturing" means manufacture of pharmaceutical products by chemical synthesis;

(6) "Production equipment exhaust system" means a device for collecting and directing out of the work area VOC fugitive emissions from reactor openings, centrifuge openings, and other vessel openings for the purpose of protecting workers from excessive VOC exposure.

§XX.9420 Applicability.

(a) This Regulation applies to all synthesized pharmaceutical manufacturing facilities located in the following counties:

(b) This Regulation applies to all sources of volatile organic compounds, including reactors, distillation units, dryers, storage of volatile organic compounds, transfer of volatile organic compounds, extraction equipment, filters, crystallizers and centrifuges that have the potential to emit 6.8 kg/day (15 lb/day) or more.

DISCUSSION

The CTG document for synthesized pharmaceutical manufacturing suggests an exemption for VOC emissions from reactors, distillation operations, crystallizers, centrifuges, and vacuum dryers that are less than 6.8 kg/day (15 lb/day). Since many of these individual vents are likely to be small in any given plant, it may often be reasonable to regulate on a plant by plant basis. This approach involves determining which synthesized pharmaceutical manufacturing facilities emit large amounts of VOC and within such plants which operations are significant sources. Control requirements would then be imposed after considering local air quality, the mass rate of emissions, control cost estimates, and plant safety effects. Source specific size limitations should be used instead of facility wide (100 TPY) size limits because of the variable nature of the VOC emissions and the fact that many facilities emit less than 100 TPY.

There are several types of pharmaceutical production activities which are not included in the synthesized pharmaceutical manufacturing definition. Fermentation, extraction of organic chemicals from vegetable materials or animal tissues, and formulation and packaging of the product are not covered by this regulation. Facilities which perform these functions probably make up the majority of the pharmaceutical facilities in the United States. However, those facilities that are included in the definition of synthesized pharmaceutical facilities emit the majority of VOC. Regardless of the number of different pharmaceutical production activities that may be conducted at any one facility, only those activities which manufacture pharmaceutical products by chemical synthesis are intended to be subject to this regulation.

§XX.9430 Provisions for Specific Processes.

(a) The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation shall control the volatile organic compound emissions from all reactors, distillation operations, crystallizers, centrifuges and vacuum dryers that have the potential to emit 6.80 kg/day (15 lb/day) or more of VOC. Surface condensers or equivalent controls shall be used, provided that:

(1) If surface condensers are used, the condenser outlet gas temperature must not exceed:

(i) -25°C when condensing VOC of vapor pressure greater than 40.0 kPa (5.8 psi),[*]

(ii) -15°C when condensing VOC of vapor pressure greater than 20.0 kPa (2.9 psi),[*]

(iii) 0°C when condensing VOC of vapor pressure greater than 10.0 kPa (1.5 psi),[*]

(iv) 10°C when condensing VOC of vapor pressure greater than 7.0 kPa (1.0 psi),[*] or,

(v) 25°C when condensing VOC of vapor pressure greater than 3.50 kPa (0.5 psi),[*]

(2) If equivalent controls are used, the VOC emissions must be reduced by at least as much as they would be by using a surface condenser which meets the requirements of part (a)(1) of this section.

(b) The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation shall reduce the VOC emissions from all air dryers and production equipment exhaust systems;

(1) by at least 90 percent if emissions are 150 kg/day (330 lb/day) or more of VOC; or,

(2) to 15.0 kg/day (33 lb/day) or less if emissions are less than 150 kg/day (330 lb/day) of VOC.

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[*] Vapor pressures as measured at 20°C.

(c) The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation shall:

(1) provide a vapor balance system or equivalent control that is at least 90.0 percent effective in reducing emissions from truck or railcar deliveries to storage tanks with capacities greater than 7,500 liters (2,000 gallons) that store VOC with vapor pressures greater than 28.0 kPa (4.1 psi) at 20°C; and,

(2) install pressure/vacuum conservation vents set at ±0.2 kPa on all storage tanks that store VOC with vapor pressures greater than 10.0 kPa (1.5 psi) at 20°C, unless a more effective control system is used.

(d) The owner or operator of a synthesized pharmaceutical facility subject to this regulation shall enclose all centrifuges, rotary vacuum filters, and other filters having an exposed liquid surface, where the liquid contains VOC and exerts a total VOC vapor pressure of 3.50 kPa (0.5 psi) or more at 20°C.

(e) The owner or operator of a synthesized pharmaceutical facility subject to this regulation shall install covers on all in-process tanks containing a volatile organic compound at any time. These covers must remain closed, unless production, sampling, maintenance, or inspection procedures require operator access.

(f) The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation shall repair all leaks from which a liquid, containing VOC, can be observed running or dripping. The repair shall be completed the first time the equipment is off-line for a period of time long enough to complete the repair.

(g) For Petition for Alternative Controls Section: see Discussion.

DISCUSSION

The surface condenser temperature versus VOC vapor pressure method was chosen by the authors of the OAQPS Guideline Series document, "Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products," EPA-450/2-78-029, because condensers are widely used in the pharmaceutical industry to recover evaporated solvent from process operations and as air pollution control devices. The method is fairly simple to implement on gas streams containing a single condensable VOC component with a known vapor pressure. However, the calculation methods for gases containing more than one condensable component are complex, particularly if the gases and liquids significantly depart from ideal behavior. A simplified calculation method is provided on page 4-6 of the guideline series document described above.

Part (a)(2) of this section allows for alternative controls that reduce VOC emissions at least as much as a surface condenser operating at the appropriate gas outlet temperature. The guideline series document gives a method for calculating the percent VOC condensed by a surface condenser on pages 4-2 through 4-6. An alternative control device can then be designed to provide an equal or greater reduction efficiency.

Appendix B of the guideline series document provides a means of calculating VOC emission rates assuming ideal gas behavior. Emission rates and total emissions are needed to determine applicability of the regulation to specific sources and to maintain an emission inventory.

An issue to consider is; what emission limit applies when several different sources, each with a different VOC component, are manifolded to a single control device. However, available information indicates that this situation is not very likely to occur.

Capture systems are not considered to be a problem in the pharmaceutical industry since most emission points have either completely sealed ductwork or sealable closures available. Notable exceptions are older centrifuges and filters. These are addressed in paragraph (d) of this section of the regulation. Venting to a control device may be necessary if the vapors in the enclosed centrifuges and filters exceed the LEL.

The 150 kg/day figure which appears in paragraph (b) of this section of the regulation is based on an engineering judgment by the authors of the CTG That is the limit below which it is economically infeasible to control VOC emissions at a 90 percent emission reduction efficiency.

The controls required by paragraph (c) of this section of the regulation are similar to those required for the storage of petroleum distillates and should be interpreted in that context. Although floating roof tanks are widely used in refineries and petrochemical plants, their applicability to pharmaceutical plant storage tanks is less certain. Floating root tanks should not be required at this time.

Even though this regulation allows a source some flexibility in choosing a cost-effective control strategy, more economically advantageous control strategies may be devised by the affected sources, if the Petition for Alternative Controls §XX.8060 in Appendix A is incorporated into this regulation. Additional information on alternative controls and the "bubble concept" also appear in the discussion section following §XX.8060.

§XX.9440 Compliance Schedules.

(a) The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation must meet the applicable increments of progress contained in the following schedule.

(1) Submit final plans for the emission control systems or process equipment, or both, before December 1, 1980;

(2) Award contracts or purchase orders for the emission control systems or process equipment, or both, before March 1, 1981;

(3) Initiate onsite construction or installation of the emission control or process equipment, or both, before June 1, 1981;

(4) Complete onsite construction or installation of the emission control or process equipment, or both, before June 1, 1982; and,

(5) Achieve final compliance, determined by accordance with §XX.9450, before December 1, 1982.

(b) The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation may submit to the Director, and the Director may approve, a proposed alternative compliance schedule provided:

(1) the proposed alternative compliance schedule is submitted before September 15, 1980;

(2) the owner or operator provides information showing the need for an alternative schedule;

(3) the alternative compliance schedule contains increments of progress;

(4) sufficient documentation and certification from appropriate suppliers, contractors, manufacturers, or fabricators is submitted by the owner or operator of the synthesized pharmaceutical manufacturing facility to justify the dates proposed for the increments of progress; and

(5) final compliance is achieved as expeditiously as possible and before the photochemical oxidant attainment date.

(c) The owner or operator of a synthesized pharmaceutical manufacturing facility subject to a compliance schedule of this section shall certify to the Director within 5 days after the deadline for each increment of progress, whether the required increment of progress has been met.

DISCUSSION

The compliance schedules in this section follow the categorical compliance schedules recommended in the memorandum from the Director of Air Quality Planning and Standards, "Categorial Compliance Schedule for VOC Sources," dated November 3, 1978. A 2-year schedule is recommended for add-on control equipment and process changes requiring the purchase of equipment. The compliance schedules presented here assume that July 1, 1980 is the effective date of the regulation.

A provision is included to allow the owner or operator of an affected facility to submit an alternative compliance schedule. This should provide additional flexibility to deal with specific circumstances. For example, pharmaceutical firms may need to seek the approval of the Food and Drug Administration for process changes. Compliance schedules should be flexible enough to allow additional time for FDA approval. The final compliance date for this part could conceivably be extended to the photochemical oxidant attainment date. However, EPA states that "if such an alternative would impact on the attainment or maintenance of any ambient standards, then approval of the alternative compliance schedule as an SIP revision would be required." Also, too many schedules extending to the attainment date might prevent a state from showing reasonable further progress toward attainment.

§XX.9450 Testing and Monitoring.

(a) Upon the request of the Director, the owner or operator of any volatile organic compound source required to comply with this regulation shall, at his own expense, demonstrate compliance by the methods of XX.9450(c) or an alternative method approved by the Director. All tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing.

(b) A person proposing to conduct a volatile organic compound emissions test shall notify the Director of the intent to test not less than 30 days before the proposed initiation of the tests so the Director may at his option observe the test. The notification shall contain the information required by, and in a format approved by, the Director.

(c) Test procedures to determine compliance with this regulation must be approved by the Director and consistent with EPA Guideline Series document, "Measurement of Volatile Organic Compounds," EPA-450/2-78-041.

(d) If add-on control equipment is used, continuous monitors of the following parameters shall be installed, periodically calibrated, and operated at all times that the associated control equipment is operating:

(1) exhaust gas temperature of all incinerators;

(2) temperature rise across a catalytic incinerator bed;

(3) breakthrough of VOC on a carbon adsorption unit; and,

(4) any other continuous monitoring or recording device required by the Director.

DISCUSSION

The results of the methods in the "Measurement of Volatile Organic Compounds" document, EPA-450/2-78-041, are expressed as a mass concentration of organic carbon. In order to convert these results to a percent reduction by weight or to a mass rate of emission reduction several situations must be considered.

In situations where only a single organic compound is being controlled, the organic carbon weight is directly convertable to VOC weight by using the molecular weight of the compound. In this case the percent reduction in mass concentration of carbon across a control device is identical to the percent reduction of VOC by weight.

In situations where a mixture of organic compounds enter a control device and two assumptions can be made: (1) that the relative concentrations of the compounds do not change across the control device (i.e., a specific compound is not selectively absorbed or adsorbed) and (2) the relative concentrations of compounds can be estimated from the conditions existing at the source of the VOC emissions. Then a weighted average of the mass of carbon as a percent of the total weight can be calculated and this factor can be used to calculate the weight of VOC represented by the mass concentration of organic carbon.

In situations where a mixture of organic compounds enter a control device and a mixture with different relative concentrations leaves the control device, the mass concentration of carbon cannot be converted without additional test methods. These methods must provide the relative concentrations of the inlet and outlet mixtures of VOC. Once the relative concentrations are known a factor can be calculated as in the above situation.

Additional test methods must also be used when measuring the emissions from incinerators, because the organic carbon concentration test method excludes CO and CO_2. Measurements of these compounds are necessary to determine the percent conversion to CO_2 and H_2O.

Measurement of volumetric flow rate can be accomplished with EPA Reference Methods 1 and 2, found in 40 CFR 60, Appendix A. The mass concentration multiplied by the volumetric flow rate will equal the mass flow rate of VOC. Once the mass flow rate is known at the inlet and at the outlet of a VOC emission control device, the percent reduction can be calculated. Two potential problems remain: (1) Methods 1 and 2 cannot be performed on small vents; and (2) the guideline series document, EPA-450/2-78-041, does not rigorously define the sampling procedure.

State and local agencies developing a regulation for this source category should give additional consideration to monitoring, recordkeeping and reporting requirements. Sample regulatory language for the type of provision can be found in §XX.8070 Monitoring, Recordkeeping and Reporting in Appendix A.

§XX.9500 MANUFACTURE OF PNEUMATIC RUBBER TIRES

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§XX.9510 Definitions.

(a) For the purpose of this Regulation, the general definitions apply.

(b) For the purpose of this Regulation, the following defintions also apply:

(1) "Pneumatic Rubber Tire Manufacture" means the production of pneumatic rubber, passenger type tire on a mass production basis.

(2) "Passenger type tire" means agricultural, airplane, industrial, mobile home, light and medium duty truck, and passenger vehicle tires with a bead diameter up to 20.0 inches and cross section dimension up to 12.8 inches.

(3) "Undertread cementing" means the application of a solvent based cement to the underside of a tire tread.

(4) "Bead dipping" means the dipping of an assembled tire bead into a solvent based cement.

(5) "Tread End Cementing" means the application of a solvent based cement to the tire tread ends.

(6) "Green tires" means assembled tires before molding and curing have occurred.

(7) "Green Tire Spraying" means the spraying of green tires, both inside and outside, with release compounds which help remove air from the tire during molding and prevent the tire from sticking to the mold after curing.

(8) "Water Based Sprays" means release compounds, sprayed on the inside and outside of green tires, in which solids, water, and emulsifiers have been substituted for organic solvents.

DISCUSSION

Water-based sprays are presently available for green tire spraying. The only volatile organic compounds which may be in a water-based spray are bactericides, corrosion inhibitors and solvent added to increase solubility of high molecular weight compounds. These compounds normally amount to less than 5 percent by volume of the spray as applied.

§XX.9520 Applicability.

(a) This Regulation applies to VOC emissions from the following operations in all pneumatic rubber tire manufacturing facilities located in the counties of ______________:

(1) Undertread cementing

(2) Tread end cementing

(3) Bead dipping

(4) Green tire spraying

(b) The provisions of this Regulation do not apply to the production of specialty tires for antique or other vehicles when produced on an irregular basis or with short production runs. This exemption applies only to tires produced on equipment separate from normal production lines for passenger type tires.

DISCUSSION

The CTG document discusses controls for pneumatic tire manufacturing that are applicable to four specific operations in the overall process. A brief rationale for recommending control for undertread cementing, tread end cementing, bead dipping and green tire spraying operations and not for the other operations is given below.

The undertread cementing operation is a portion of the rubber stock processing operation in which the tread is tackified by the application of a solvent-based cement. This process emits approximately 94 grams of VOC per average tire. This represents about 36 percent of the total VOC emissions from an average facility. The available controls are carbon absorption, which is already in place in at least one facility, and incineration, which has been used in other rubber industries on gas streams with similar types and concentrations of VOC.

Tread end cementing is an operation in which cement is either automatically sprayed or manually applied to tread ends. The estimated VOC emissions are 15 gm per tire or about 6 percent of the total VOC emissions from an average facility. The available controls are carbon adsorption or incineration, both of which are in place in other industries on gas streams with similar types and concentrations of VOC emissions.

Bead dipping is an operation in which the bead (the part of the tire which adheres to the wheel rim), which is assembled in several layers, is dipped into a solvent-based cement. This tackifies the rubber and ensures proper adhesion when the bead is anchored into the sidewall. The estimated VOC emissions are 8.2 gm per tire, or about 3 percent of the total VOC emissions from an average facility. The available controls are carbon adsorption or incineration, both of which are in place in industries with similar types and concentrations of VOC emissions. It should be noted that the bead dipping operation is not used at all pneumatic rubber tire manufacturing plants.

Green tire spraying is an operation which occurs after the tires have been built and before they have been molded and cured. The operation consists of spraying the inside and outside of the tire with release compounds which help remove air from the tire during molding and prevent the tires from sticking to the mold after curing. The average VOC emissions from this operation are about 100 gm per tire or about 38 percent of the total VOC emissions from a facility. The preferred control technique is conversion to water-based sprays. Alternative control methods include carbon adsorption and incineration.

The following list of operations were not recommended for control by the CTG primarily because of the lower emission factors for these operations. An exception to this is the tire building operation which emits a significant quantity of VOC. However, the tire building machines occupy about 25 percent of a facility's floor space. Consequently, there are very large areas over which the VOC's are emitted at very dilute concentrations. Controlling these emissions is significantly less cost effective than the operations recommended for control by the CTG.

List of Operations Not
Affected by the Control
Technique Guideline Recommendations

Operation	gm VOC emitted/ average tire
Tire building	33
Compounding	1.0
Milling	0.6
Tread and sidewall preparation	0.6
Calendering	0.6
Molding and curing	2.0
Finishing	5.7

One source of VOC emissions which does not appear on this list is a latex dipping operation. This operation is believed to be part of only two tire manufacturing facilities in the United States and will be covered as an affected facility under the textile manufacturing CTG.

The applicability of the guideline will not be limited by the size of the plant. Since the average plant produces 16,000 tires per day and emits an estimated 1,000 metric ton/yr (1,100 ton/yr), it is assumed that all plants which manufacture passenger type pneumatic rubber tires will be subject to the regulation.

A facility manufacturing a part of a pneumatic passenger type rubber tire employing one or more of the operations listed in subparagraph (a) is covered by the regulation. An example of this type of facility is one manufacturing tire treads for the tire recapping industry. The actual recapping operation would not be covered.

Paragraph (b) of this section provides an exemption for the production of specialty tires on an irregular basis or with short production runs. However, if these tires are made on equipment that is also used for the production of passenger type tires, the VOC emissions from those operations are still covered by this regulation.

§XX.9530 Provisions for Specific Processes.

(a) The owner or operator of an undertread cementing, tread end cementing, or bead dipping operation subject to this regulation shall:

(1) Install and operate a capture system, designed to achieve maximum reasonable capture, up to 85 percent by weight of VOC emitted, from all undertread cementing, tread end cementing and bead dipping operations. Maximum reasonable capture shall be consistent with the following documents:

(i) Industrial Ventilation, A Manual of Recommended Practices, 14th Edition, American Federation of Industrial Hygienists.

(ii) Recommended Industrial Ventilation Guidelines, U.S. Department of Health, Education and Welfare, National Institute of Occupational Safety and Health.

(2) Install and operate a control device that meets the requirements of one of the following:

(i) A carbon adsorption system designed and operated in a manner such that there is at least a 95.0 percent removal of VOC by weight from the gases ducted to the control device; or,

(ii) An incineration system that oxidizes at least 90.0 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator to carbon dioxide and water.

(iii) An alternative volatile organic compound emission reduction system certified by the owner or operator to have at least a 90.0 percent reduction efficiency, measured across the control system, and has been approved by the Director.

(b) The owner or operator of a green tire spraying operation subject to this regulation must implement one of the following means of reducing volatile organic compound emissions:

(1) Substitute water-based sprays for the normal solvent-based mold release compound; or,

(2) (i) Install a capture system designed and operated in a manner that will capture and transfer at least 90.0 percent of the VOC emitted by the green tire spraying operation to a control device; and,

(ii) In addition to part (i), install and operate a control device that meets the requirements of one of the following:

(A) A carbon adsorption system designed and operated in a manner such that there is at least 95.0 percent removal of VOC by weight from the gases ducted to the control device; or,

(B) An incineration system that oxidizes at least 90.0 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) to carbon dioxide and water; or

(C) An alternative volatile organic compound emission reduction system certified by the owner or operator to have at least a 90.0 percent reduction efficiency, measured across the control system, that has been approved by the Director.

(c) An owner or operator of an undertread cementing, tread end cementing, bead dipping or green tire spraying operation subject to this regulation may, instead of implementing measures required by subparagraph (a) and (b) above, submit to the Director a petition for alternative controls. The petition must be submitted in writing before September 15, 1980 and must contain:

(1) the name and address of the company and the name and telephone number of a responsible company representative over whose signature the petition is submitted;

(2) a description of all operations conducted at the location to which the petition applies and the purpose the volatile organic compound emitting equipment serves within the operations;

(3) reference to the specific emission limits, operational and/or equipment controls for which alternative emission limits, operational and/or equipment controls are proposed;

(4) a detailed description of the proposed alternative emission limits, operational and/or equipment controls, the magnitude of volatile organic compound emission reduction which will be achieved, and the quantity and composition of volatile organic compounds which will be emitted if the alternative emission limits, operational and/or equipment controls are instituted;

(5) a schedule for the installation and/or institution of the alternative operational and/or equipment controls in conformance with the appropriate compliance schedule section;

(6) a demonstration that the alternative control program constitutes reasonably available control technology for the petitioned facility. The factors to be presented in this demonstration include but are not limited to:

  (i) the capital expenditure necessary to achieve the petitioned level of control;

  (ii) the impact of these costs on the firm;

  (iii) the energy requirements of the petitioned level of control;

  (iv) the impact on the environment in terms of any increase in air, water and solid waste effluent discharge of the petitioned level of control;

(v) *any adverse worker or product safety implications of the petitioned level of control;*

(vi) *an analysis for each of the factors in (i) through (v) above for the control levels specified in paragraphs (a) and (b) of this section.*

(d) *The Director may approve a Petition for Alternative Control if:*

(1) *the petition is submitted in accordance with paragraph (c) of this section;*

(2) *the petition demonstrates that the alternative controls represent reasonable available control technology;*

(3) *the petition contains a compliance schedule for achieving and maintaining a reduction of volatile organic compound emissions as expeditiously as practicable, but no later than the photochemical oxidant attainment date.*

(e) *No alternative control plan is effective until it is submitted to and approved by the Administrator of the United States Environmental Protection Agency as a revision of the State Implementation Plan pursuant to Section 110(a)(3)(A) of the Clean Air Act.*

DISCUSSION

This sample regulation is based on the CTG's "presumptive norm" for reasonably available control technology for specific processes covered by the CTG. The CTG's recommended controls, of necessity, were based on an evaluation of the industry as a whole. Therefore, the sample regulation not only sets forth the controls recommended in the CTG, but also specifically provides for case by case determination of RACT. The alternative control option lists those factors which should be considered in determining RACT for a particular source. These factors include capital expenditures, cost impacts, energy requirements, environmental impacts, and worker or product safety impacts. The use of an alternative control option also recognizes that the cooperation of sources is required in making case by case evaluation. The State may wish to make these evaluations and adopt source specific rather than a generic regulation.

There are several problems with determining a minimum capture efficiency for undertread cementing, tread end cementing and bead dipping equipment and operations. The design and layout of the equipment varies considerably from plant to plant, operator accessibility must be provided to certain areas of the equipment, and it may not be practical to completely hood long conveyors. Therefore, instead of setting a minimum capture efficiency, the sample regulation requires the determination of the maximum reasonable capture using 85 percent capture efficiency as a goal. The owner or operator of a source of VOC is urged to make every reasonable effort to meet the 85 percent capture efficiency. The referenced documents generally give ranges within which specific design parameters fall. If a capture system is not designed to achieve 85 percent capture, then the owner or operator should choose the value within the range which will result in a maximum capture efficiency, considering the physical limitations of the specific situation. As noted in the CTG, percent capture efficiency should be determined on an individual plant basis.

§XX.9540 Compliance Schedules.

(a) The owner or operator of a pneumatic rubber tire manufacturing plant with operations subject to this regulation shall meet the applicable increments of progress contained in the following schedules:

(1) For process equipment changes, low solvent technology and add-on control devices, including incineration with heat recovery:

(i) Submit final plans for the emission control system or process equipment, or both, before October 15, 1980;

(ii) Award contracts or purchase orders for the emission control system or process equipment, or both, before December 15, 1980;

(iii) Initiate onsite construction or installation of the emission control device or process equipment, or both, before May 1, 1981;

(iv) Complete onsite construction or installation of the emission control device or process equipment, or both, before May 1, 1982; and,

(v) Achieve final compliance, determined in accordance with § XX.9550, before July 1, 1982.

(2) For incineration without heat recovery and substitution of water-based spray in the green tire spraying operation:

(i) Submit final plans for incineration equipment or water-based spray substitution, or both, before September 15, 1980;

(ii) Award all contracts or purchase orders for incineration equipment or water-based spray substitution, or both, before November 15, 1980;

(iii) Initiate onsite construction or installation of incineration equipment or water-based spray modifications before January 15, 1980;

(iv) Complete onsite construction or installation of incineration equipment or water-based spray modifications before May 15, 1981; and, *(v) Achieve final compliance, determined in accordance with §XX.9550, before July 1, 1981.*

(b) The owner or operator of a pneumatic rubber tire manufacturing plant with operations subject to this regulation may submit to the Director, and the Director may approve, a proposed alternative compliance schedule provided:

(1) The proposed alternative compliance schedule is submitted before September 15, 1980;

(2) The owner or operator provides information showing the need for an alternative schedule;

(3) The alternative compliance schedule contains increments of progress;

(4) Sufficient documentation and certification from appropriate suppliers, contractors, manufacturers, or fabricators is submitted by the owner or operator of the volatile organic compound source to justify the dates proposed for the increments of progress; and,

(5) Final compliance is achieved as expeditiously as possible and before the photochemical oxidant attainment date.

(c) The owner or operator of a pneumatic rubber tire manufacturing plant with operations subject to a compliance schedule of this section shall certify to the Director within 5 days after the deadline for each increment of progress, whether the required increment of progress has been met.

DISCUSSION

The compliance schedules in this section follow the categorical compliance schedules recommended in the memorandum from the Director of Air Quality Planning and Standards, "Categorical Compliance Schedule for VOC Sources," dated November 3, 1978. A 2-year schedule is recommended for add-on control equipment and process changes requiring the purchase of equipment, except for incineration systems without heat recovery. A 1-year schedule is recommended for installation of incineration systems without heat recovery, or process modifications not requiring the purchase of equipment. The compliance schedules presented here assume that July 1, 1980 is the effective date of the regulation.

A provision is included to allow the owner or operator of an affected facility to submit an alternative compliance schedule. The final compliance date for this part could conceivably be extended to the photochemical oxidant attainment date. However, EPA states that "if such an alternative would impact on the attainment or maintenance of any ambient standards, then approval of the alternative schedule as an SIP revision would be required." Also, too many schedules extending to the attainment date might prevent a state from showing reasonable further progress toward attainment.

§XX.9550 Testing and Monitoring.

(a) Upon request of the Director, the owner or operator of a volatile organic compound source required to comply with this regulation shall, at his own expense, demonstrate compliance by the methods of part (c) of this section, or an alternative method approved by the Director. All tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing.

(b) A person proposing to conduct a volatile organic compound emissions test shall notify the Director of the intent to test not less than 30 days before the proposed initiation of the tests so the Director may at his option observe the test. The notification shall contain the information required by, and be in a format approved by, the Director.

(c) (1) Test procedures to determine compliance with this regulation must be approved by the Director and be consistent with:

(i) EPA Guideline Series document, "Measurement of Volatile Organic Compounds," EPA-450/2-78-041; and,

(ii) Appendix A of "Control of Volatile Organic Emissions from Existing Stationary Sources - Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks," EPA-450/2-77-008.

(2) The Director may accept, instead of green tire spray analysis, a certification by the manufacturer of the composition of the green tire spray, if supported by actual batch formulation records.

(d) If add-on control equipment is used, continuous monitors of the following parameters shall be installed, periodically calibrated, and operated at all times that the associated control equipment is operating:

(1) exhaust gas temperatures of incinerators;

(2) temperature rise across a catalytic incinerator bed;

(3) breakthrough of VOC on a carbon adsorption unit; and,

(4) any other continuous monitoring or recording device required by the Director.

DISCUSSION

Conversion of Organic Carbon to VOC: The results of the methods in the Measurement of Volatile Organic Compounds document, EPA-450/2-78-041, are expressed as a mass concentration of organic carbon. In order to convert these results to a percent reduction by weight or to a mass rate of emission reduction several situations must be considered.

In situations where only a single organic compound is being controlled, the organic carbon weight is directly convertible to VOC weight by using the molecular weight of the compound. In this case the percent reduction in mass concentration of carbon across a control device is identical to the percent reduction of VOC by weight.

In many situations a mixture of organic compounds enter a control device. If two assumptions can be made: (1) that the relative concentrations of the compounds do not change across the control device (i.e., a specific compound is not selectively absorbed or absorbed); and, (2) the relative concentrations of compounds can be estimated from the conditions existing at the source of the VOC emissions, then a weighted average of the mass of carbon as a percent of the total weight can be calculated. This factor can be used to calculate the weight of VOC represented by the mass concentration of organic carbon.

In situations where a mixture of organic compounds enter a control device and a mixture with different relative concentrations leaves the control device, the mass concentration of carbon cannot be converted without additional test methods. These methods must provide the relative concentrations of the inlet and the outlet mixtures of VOC. Once the relative concentrations are known a factor can be calculated as in the above situation.

Additional test methods must also be used when measuring the emissions from incinerators, because the organic carbon concentration test method excludes CO and CO_2. Measurements of these compounds are needed to determine the percent conversion to CO_2 and H_2O.

Add-on control equipment: For undertread cementing, tread and cementing, and bead dipping, the uncontrolled VOC mass emission rate can be calculated from the composition of the cement and the rate of cement usage. Some procedure must be devised which includes the number of runs required and the time limit for each run for determining an average rate of cement usage. This is a weak point in the test procedure, since an "average rate of cement usage" is not defined.

The mass rate of VOC emission reduction by the emission control device can be calculated by a combination of measuring the VOC mass concentration (consistent with the procedures in EPA-450/2-78-041) in the entrance and exit air streams along with the air flow measurements. Measurement of volumetric flow rate can be accomplished with EPA Reference Methods 1 and 2, found in 40 CFR 60, Appendix A. The mass concentration multiplied by the volumetric flow rate will equal the mass flow rate of VOC. Once the mass flow rate is known at the inlet and at the outlet of a VOC emission control device, the percent reduction can be calculated. Two potential problems remain, Methods 1 and 2 cannot be performed on small vents and the guideline series document, EPA-450/2-78-041, does not rigorously define the sampling procedure.

Determination of the VOC content of green tire sprays may be accomplished with procedures similar to those referenced in part (c)(1).

The CTG recommends some monitoring instruments that should be required where incineration is employed in order to aid the regulatory agency when performing spot checks. All incinerators should be equipped with temperature indicators in the combustion chamber. Recorders should be required for larger installations. The temperature rise across the catalyst bed should be monitored continuously for catalytic incinerators and carbon adsorption bed breakthrough should be monitored on carbon adsorption units.

State and local agencies developing a regulation for this source category should give additional consideration to monitoring, recordkeeping and reporting requirements. Sample regulatory language for this type of provision can be found in §XX.8070 Monitoring, Recordkeeping and Reporting in Appendix A.

§XX.9600 GRAPHIC ARTS SYSTEMS

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§XX.9610 *Definitions.*

(a) *For the purpose of this Regulation, the general definitions apply.*

(b) *For the purpose of this Regulation, the following definitions also apply:*

  (1) *"Packaging rotogravure printing" means rotogravure printing upon paper, paper board, metal foil, plastic film, and other substrates, which are, in subsequent operations, formed into packaging products and labels for articles to be sold.*

  (2) *"Publication rotogravure printing" means rotogravure printing upon paper which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, and other types of printed materials.*

  (3) *"Flexographic Printing" means the application of words, designs and pictures to a substrate by means of a roll printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastomeric materials.*

  (4) *"Rotogravure printing" means the application of words, designs, and pictures to a substrate by means of a roll printing technique which involves an intaglio or recessed image areas in the form of cells.*

  (5) *"Roll printing" means the application of words, designs and pictures to a substrate usually by means of a series of hard rubber or steel rolls each with only partial coverage.*

XX.9620 *Applicability.*

(a) This Regulation applies to all packaging rotogravure, publication rotogravure, and flexographic printing facilities located in the following counties:

(b) This Regulation applies to all facilities whose potential emissions of volatile organic compounds are equal to or more than 90 megagrams (10^6 grams) per year (100 ton/yr). Potential emissions are to be calculated based on historical records of actual comsumption of solvent and ink.

DISCUSSION

This regulation is applicable to both flexographic and rotogravure processes as applied to both publication and packaging printing. It does not apply to offset lithography or letterpress printing since these processes do not normally use volatile organic compounds.

Those machines which have both coating units (application of a uniform layer of material across the entire width of a web) and printing units (formation of words, designs and pictures) should be considered as performing a printing operation. This approach is consistent with the "Clarification of Paper Coating Definition for VOC Sources" memorandum by the Director of the Control Programs Development Division, OAQPS, dated November 1978.

The 100 TPY size limitation is based on the following information from an EPA study on the Flexible Packaging Industry.* The study states that the bulk of the emissions from the flexographic printing industry are produced by large facilities, each emitting more than 1000 TPY of volatile organic compounds. This study does not include the publication rotogravure industry, but these numbers are considered representative of the industries addressed in this regulation since most publication rotogravure facilities also emit in excess of 1,000 TPY.

Facilities with total VOC emissions less than	Percent of total industry VOC emissions
50 TPY	<1.0
125 TPY	<2.7
250 TPY	<7.6

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*Draft Overview Assessment of Organic Emissions of the Flexible Packaging Industry, EPA Contract No. 68-03-2580.

Operating schedules for printing machines vary considerably, making usual potential emissions calculations difficult. Calculations based on actual consumption of solvent and ink should include both the solvent used for dilution of ink and for equipment cleanup.

In some cases waste solvent and dirty cleaning solvent will be collected and disposed of in a manner which prevents its evaporation to the atmosphere. Unless specifically documented, it should be assumed that all other solvent used evaporates into the atmosphere.

§XX.9630 *Provisions for Specific Processes.*

(a) No owner or operator of a packaging rotogravure, publication rotogravure or flexographic printing facility subject to this regulation and employing solvent containing ink may operate, cause, allow or permit the operation of the facility unless:

(1) The volatile fraction of ink, as it is applied to the substrate, contains 25.0 percent by volume or less of organic solvent and 75.0 percent by volume or more of water;

(2) The ink as it is applied to the substrate, less water, contains 60.0 percent by volume or more nonvolatile material; or,

(3) The owner or operator installs and operates;

(i) A carbon adsorption system which reduces the volatile organic emissions from the capture system by at least 90.0 percent by weight;

(ii) An incineration system which oxidizes at least 90.0 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) to carbon dioxide and water; or,

(iii) An alternative volatile organic compound emission reduction system demonstrated to have at least a 90.0 percent reduction efficiency, measured across the control system, and has been approved by the Director.

(b) A capture system must be used in conjunction with the emission control systems in part (a)(3). The design and operation of a capture system must be consistent with good engineering practice, and shall be required to provide for an overall reduction in volatile organic compound emissions of at least:

(1) 75.0 percent where a publication rotogravure process is employed;

(2) 65.0 percent where a packaging rotogravure process is employed; or,

(3) 60.0 percent where a flexographic printing process is employed.

(c) *For Petition for Alternative Controls Section: see Discussion.*

DISCUSSION

There are three general methods of limiting VOC emissions from rotogravure and flexographic printing processes.

The first method is water-borne ink which requires that the volatile portion of the ink contain 25 percent by volume or less VOC. An example of an ink meeting this requirement is one that contains 20 percent solids, 20 percent organic solvent and 60 percent water, after it has been diluted for use in the printing machines. The organic solvent and water constitute the volatile portion of the ink. The water and solvent exist in a 3 to 1 ratio or 75 percent water and 25 percent VOC.

The second method is high solids technology which is primarily experimental at this time, but which could provide emission reductions comparable to the existing technology. This method of reducing VOC emissions is included at the request of the printing industry.

The third method is add-on control which is generally available technology for this industry. The reductions in VOC across the control equipment are the same as for other industries. However, capture efficiencies pose somewhat of a problem. The printing and drying equipment often cannot be tightly hooded and efforts to achieve high capture efficiencies may result in large volumes of captured gases with dilute concentrations of VOC. This of course results in extremely large and costly control equipment. The overall reduction efficiencies in §XX.9630(b) are meant to be target reduction efficiencies. A careful review of the final plans submitted to the state or local agency must be conducted to insure that the capture system provides an optimal capture efficiency. The following list is based on the Summary of Applicability of Control Methods, pages 3-9 through 3-10 of the Graphic Art CTG document, EPA-450/2-78-033.

Process	Capture efficiency (percent)
Publication Rotogravure	75 - 85
Packaging Rotogravure	70 - 80
Flexography	65 - 70

Many of the present solvent mixtures were developed to comply with Rule 66 of Los Angeles County and similar legislation. Because of EPA's 1977 policy statement on reactivity, it may be possible to revert to solvent mixtures used prior to Rule 66 type regulations. Many printers will be able to revert to a mixture of immiscible hydrocarbons and a single ester or MEK, which could be reused after dewatering. It will be practical for many packaging type printers to solve a large percentage of their emission control requirements by the use of carbon adsorption and relatively simple dewatering techniques. The owner or operator of a graphic arts VOC emission source should be given the opportunity to change the type of ink which is used before designing the carbon adsorption system or incinerator for the capture or destruction of the solvent emission.

Paragraph (c) of this section of the regulation is included to allow the bubble concept or internal offsets to be applied. A detailed discussion appears after XX.8060 in General Provisions, Appendix A.

Question:	Does this regulation apply to VOC emissions from the application of coatings, varnishes and/or adhesives?
Answer:	The printing regulation does not apply, unless the application of coatings, varnishes and/or adhesives is done on the same machine or in the same operation as the printing. In this case these emissions cannot practically be separated from the printing emissions and all emissions would be included in the overall emission reduction required by §XX.9630(b). Except for this case, VOC emissions from the application of coatings, varnishes, and/or adhesives are not intended to be covered by this regulation. However, these emissions may by subject to previous coating regulations, such as the paper coating regulation.

Even though this regulation allows a source some flexibility in choosing a cost-effective control strategy, more economically advantageous control strategies may be devised by the affected sources, if the Petition for Alternative Controls §XX.8060 in Appendix A is incorporated into this regulation. Additional information on alternative controls and the "bubble concept" also appear in the discussion section following §XX.8060.

§XX.9640 Compliance Schedules.

(a) The owner or operator of a packaging rotogravure, publication rotogravure or flexographic printing facility subject to this regulation must meet the increments of progress in the following schedules.

(1) For process equipment changes, and add-on control devices, including incineration with heat recovery:

(i) Submit final plans for the emission control system or process equipment, or both, before October 15, 1980;

(ii) Award contracts or purchase orders for the emission control system or process equipment, or both, before December 15, 1980;

(iii) Initiate onsite construction or installation of the emission control or process equipment, or both, before June 1, 1981;

(iv) Complete onsite construction or installation of the emission control or process equipment, or both, before June 1, 1982; and,

(v) Achieve final compliance, determined in accordance with §XX.9650, before July 1, 1982.

(2) For incineration equipment without heat recovery or process modifications not requiring purchase orders:

(i) Submit final plans for the emission control system or process modifications, or both, before September 15, 1980;

(ii) Award contracts for process modifications or for incineration equipment, or both, before November 1, 1980;

(iii) Initiate onsite construction or installation of process modifications or emission control equipment, or both, before January 15, 1981;

(iv) Complete onsite construction or installation of process modifications or incineration equipment, or both, before May 15, 1981; and

(v) Achieve final compliance, determined in accordance with §XX.9650, before July 1, 1981.

(3) For low solvent technology: (see discussion)

(b) The owner or operator of a packaging rotogravure, publication rotogravure or flexographic printing facility subject to this regulation may submit to the Director, and the Director may approve, a proposed alternative compliance schedule provided:

(1) The proposed alternative compliance schedule is submitted before September 15, 1980;

(2) The owner or operator provides information showing the need for an alternative schedule;

(3) The alternative compliance schedule contains increments of progress;

(4) Sufficient documentation and certification from appropriate suppliers, contractors, manufacturers, or fabricators is submitted by the owner or operator of the subject facility to justify the dates proposed for the increments of progress; and

(5) Final compliance is achieved as expeditiously as possible but no later than the photochemical oxidant attainment date.

(c) The owner or operator of a volatile organic compound source subject to a compliance schedule of this section shall certify to the Director within 5 days after the deadline for each increment of progress, whether the required increment of progress has been met.

DISCUSSION

According to the EPA memorandum of November 3, 1978, on "Categorical Compliance Schedules for VOC Sources," a 2-year compliance schedule is recommended for carbon adsorption, incineration with heat recovery, and low-solvent technology. A 1-year compliance schedule is recommended for incineration without heat recovery. Assuming July 1, 1980 as the effective day of the regulation, the following progress increments would be required:

	Compliance date	
Progress increment	Incineration	Carbon adsorption, low-solvent technology
1. Control Plan Submitted	September 15, 1980	October 15, 1980
2. Contract Award	November 1, 1980	December 15, 1980
3. Initiation of Construction	January 15, 1981	June 1, 1981
4. Construction Completed	May 15, 1981	June 1, 1982
5. Final Compliance	July 1, 1981	July 1, 1982

For certain applications, low solvent technology (LST) can be applied in an expeditious manner according to the Flexible Packaging Association, Gravure Technical Institute and other industry representatives who commented on the draft of this document. They also indicated that LST can result in greater emission reduction than incineration or carbon adsorption. However, sufficient time is needed to allow for the development of water borne or high solids inks. Accordingly, the Flexible Packaging Association is preparing a series of alternative compliance programs to allow for the development of low solvent inks for certain applications. We anticipate that this program will be presented to EPA and affected states in the coming months. Since EPA has not had an opportunity to review and comment on these proposals and since one is expected in the next few weeks, it is not appropriate to include a schedule at this time. Additional information will be provided at a later date.

A paragraph for Alternative Compliance Schedules is included. The owner or operator of the emission source should be allowed to submit a proposed alternative schedule to the Director for review as long as it is presented before September 15, 1980 and it is properly documented. The Director must be able to approve a separate schedule for any source if he finds that compliance with paragraphs (a)(1) or (2) is not feasible.

EPA states, however, that "if such an alternative compliance schedule would impact on attainment or maintenance of any ambient standards, then approval of the alternative compliance schedule as a SIP revision would be required...Too many alternative schedules extending until December 31, 1982, might also prevent a state from showing reasonable further progress toward attainment..."

§XX.9650 Testing and Monitoring.

(a) Upon request of the Director, the owner or operator of a volatile organic compound source shall, at his own expense, demonstrate compliance by the methods of part (c) of this section or an alternative method approved by the Director. All tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing.

(b) A person proposing to conduct a volatile organic compound emissions test to demonstrate compliance with this regulation shall notify the Director of the intent to test not less than 30 days before the proposed initiation of the tests so the Director may at his option observe the test. The notification shall contain the information required by, and be in a format approved by, the Director.

(c) (1) Test procedures to determine compliance with §XX.9630 must be approved by the Director and consistent with:

(i) EPA Guideline Series document, "Measurement of Volatile Organic Compounds," EPA-450/2-78-041; and

(ii) Appendix A of "Control Volatile Organic Emissions from Existing Stationary Sources - Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks," EPA-450/2-77-008.

(2) The Director may accept, instead of ink solvent analysis, a certification by the ink manufacturer of the composition of the ink solvent, if supported by actual batch formulation records.

(d) If add-on control equipment is used, continuous monitors of the following parameters shall be installed, periodically calibrated, and operated at all times that the associated control equipment is operating:

(1) exhaust gas temperature of all incinerators;

(2) temperature rise across a catalytic incinerator bed;

(3) breakthrough of VOC on a carbon adsorption unit; and,

(4) any other continuous monitoring or recording device required by the Director.

DISCUSSION

Water-borne Technology: Where the owner or operator of a graphic arts process chooses water-borne technology to reduce emissions, a verification of the composition of the ink must be made by the regulatory agency. In order to qualify, the volatile fraction of the ink must contain, 25 percent by volume or less of organic solvent and 75 percent by volume or more of water.

High Solids Technology: Where the owner or operator of a facility subject to this regulation chooses high solids technology, a verification of the composition of the ink must be made by the regulatory agency. In order to qualify the ink must contain 60 percent or more nonvolatile compounds by volume.

Conversion of Organic Carbon to VOC: The results of the methods in the Measurement of Volatile Organic Compounds document EPA-450/2-78-041, are expressed as a mass concentration of organic carbon. In order to convert these results to a percent reduction by weight or to a mass rate of emission reduction several situations must be considered.

In situations where only a single organic compound is being controlled, the organic carbon weight is directly convertable to VOC weight by using the molecular weight of the compound. In this case the percent reduction in mass concentration of carbon across a control device is identical to the percent reduction of VOC by weight.

In situations where a mixture of organic compounds enter a control device and two assumptions can be made; (1) that the relative concentrations of the compounds do not change across the control device (i.e., a specific compound is not selectively absorbed or adsorbed); and (2) the relative concentrations of compounds can be estimated from the conditions existing at the source of the VOC emissions. Then a weighted average of the mass of carbon as a percent of the total weight can be calculated and can be used to calculate the weight of VOC represented by the mass concentration of organic carbon.

In situations where a mixture of organic compounds enter a control device and a mixture with different relative concentrations leaves the control device, the mass concentration of carbon cannot be converted without additional test methods. These methods must provide the relative concentrations of the inlet and outlet mixtures of VOC. Once the relative concentrations are known a factor can be calculated as in the above situation.

Additional test methods must also be used when measuring the emissions from incinerators, because the organic carbon concentration test method excludes CO and CO_2. Measurements of these compounds are needed to determine the percent conversion to CO_2 and H_2O.

Add-on control equipment: The regulation recommended by the authors of the CTG is based on "overall emission reduction efficiency" factors. In order to calculate these factors, the uncontrolled VOC mass emission rate and the mass rate of removal must be calculated.

The uncontrolled VOC mass emission rate can be calculated from the composition of the ink and the rate of ink usage. Some procedure must be devised which includes the number of runs required and the time limit for each run for determining an average rate of ink usage. This is the weak point in the test procedure, since an "average rate of ink usage" is not defined.

The mass rate of VOC emission reduction by the emission control device can be calculated by a combination of measuring the VOC mass concentration (consistent with the procedures in the Guideline Series document) in the entrance and exit air streams along with the air flow measurements.

The "overall emission reduction efficiency" can then be calculated by:

$$\frac{\text{mass rate of VOC emission reduction}}{\text{uncontrolled mass emission rate}} \times 100 \text{ percent}$$

The CTG recommends some monitoring instruments that should be required where incineration is employed in order to aid the regulatory agency when performing spot checks. All incinerators should be equipped with temperature indicators in the combustion chamber. Recorders should be required for larger installations. The temperature rise across the catalyst bed should be monitored continuously for catalytic incinerators and carbon adsorption bed breakthrough should be monitored on carbon adsorption units.

State and local agencies developing a regulation for this source category should give additional consideration to monitoring, recordkeeping and reporting requirements. Sample regulatory language for this type of provision can be found in §XX.8070 Monitoring, Recordkeeping and Reporting in Appendix A.

§XX.9700 PETROLEUM LIQUID STORAGE IN EXTERNAL FLOATING ROOF TANKS

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§XX.9710 *Definitions.*

(a) For the purpose of this Regulation, the general definitions apply.

(b) For the purpose of this Regulation, the following definitions also apply:

(1) "Condensate" means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

(2) "Crude oil" means a naturally occurring mixture which consists of hydrocarbons and sulfur, nitrogen and/or oxygen derivatives of hydrocarbons which is a liquid at standard conditions.

(3) "Lease custody transfer" means the transfer of produced crude oil and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

(4) "External floating roof" means a storage vessel cover in an open top tank consisting of a double deck or pontoon single deck which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

(5) "Liquid-mounted seal" means a primary seal mounted in continuous contact with the liquid between the tank wall and the floating roof around the circumference of the tank.

(6) "Petroleum liquids" mean crude oil, condensate, and any finished or intermediate products manufactured or extracted in a petroleum refinery.

(7) "Vapor-mounted seal" means a primary seal mounted so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank wall, the liquid surface, and the floating roof.

(8) "Waxy, heavy pour crude oil" means a crude oil with a pour point of 50°F or higher as determined by the American Society for Testing and Materials Standard D97-66, "Test for Pour Point of Petroleum Oils."

§XX.9720 Applicability.

(a) This Regulation applies to all petroleum liquid storage vessels equipped with external floating roofs, having capacities greater than 150,000 liters (40,000 gal), that are located in the following counties:

(b) This Regulation does not apply to petroleum liquid storage vessels which:

  (1) are used to store waxy, heavy pour crude oil;

  (2) have capacities less than 1,600,000 liters (420,000 gal) and are used to store produced crude oil and condensate prior to lease custody transfer;

  (3) contain a petroleum liquid with a true vapor pressure of less than 10.5 kPa (1.5 psia);

  (4) contain a petroleum liquid with a true vapor pressure less than 27.6 kPa (4.0 psia); and,

    (i) are of welded construction; and,

    (ii) presently possess a metallic-type shoe seal, a liquid-mounted foam seal, a liquid-mounted liquid filled type seal, or other closure device of demonstrated equivalance approved by the Director; or,

  (5) are of welded construction, equipped with a metallic-type shoe primary seal and has a secondary seal from the top of the shoe seal to the tank wall (shoe-mounted secondary seal).

DISCUSSION

It should be noted that storage vessels containing petroleum liquids with a true vapor pressure of less than 10.5 kPa (1.5 psi) are not included in this applicability statement. However, in paragraph §XX.9730 (c) the owner or operator must maintain records for petroleum liquids with a true vapor pressure of greater than 7.0 kPa (1.0 psi). This is done to insure that records are kept of marginal exemptions on a continuing basis.

Some disucssion of the exemptions in part (b) of this section of the regulation is necessary. The CTG suggests that an exemption be given to "waxy, heavy pour crudes." This is due to the fact that "these crudes cause a deposit on the tank wall which is scraped onto the roof when the tank is worked, damaging the secondary seal."

If the vessel is of riveted construction and not used for lease custody transfer, the only exemption is for size (less than 150,000 liters) and true vapor pressure (less than 10.5 kPa). If the vessel is of welded construction (and, also not used for lease custody transfer), the size exemption is still 150,000 liter but the vapor pressure exemption becomes a function of the existing primary seal type. If the seal is a metallic-type shoe, liquid-mounted foam, liquid-mounted liquid filled, or equivalent, the minimum vapor pressure for exemption rises to 27.6 kPa (4.0 psia). An expected result of this variable vapor pressure requirement will be attempts by owners of tanks with primary seals that cannot be conclusively included in the three categories exempted at 4.0 psia to demonstrate equivalence to the Director. If they cannot demonstrate equivalence they are then subjected to a stricter regulation.

The state agencies must understand the criteria of equivalency. The key criteria is that the seal must be either shoe-type or liquid mounted (i.e., the seal is in contact with the surface of the contained liquid). If the seal is of any of the vapor-mounted types, it should be subject to the 1.5 psia vapor pressure exemption.

An exemption is provided for petroleum liquid storage vessels which are of welded construction, which have a metallic-type shoe primary seal, and which have a secondary seal from the top of the shoe seal to the tank wall (shoe-mounted secondary seal).

Tanks less than 420,000 gallons used to store crude oil prior to lease custody transfer (oil field production storage) are exempted also. These tanks are generally of a fixed roof type and bolted construction to enable them to be moved as needed. As fixed roof tanks are not covered by this regulation, the exemption is only for those oil field production storage tanks that have external floating roofs. The emissions from these tanks have not been quantified at present, therefore the emission reductions from requiring a secondary seal is uncertain. This exemption applies to tanks storing the petroleum liquid from the time it is removed from the ground until custody is transferred from the production operation to the transportation operation.

§XX.9730 *Provisions for Specific Processes.*

(a) No owner of a petroleum liquid storage vessel subject to this regulation shall store a petroleum liquid in that vessel unless:

(1) The vessel has been fitted with:

(i) a continuous secondary seal extending from the floating roof to the tank wall (rim-mounted secondary seal); or

(ii) a closure or other device which controls VOC emissions with an effectiveness equal to or greater than a seal required under part (a)(1)(i) of this section and approved by the Director.

(2) All seal closure devices meet the following requirements:

(i) there are no visible holes, tears, or other openings in the seal(s) or seal fabric;

(ii) the seal(s) are intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall; and,

(iii) for vapor mounted primary seals, the accumulated area of gaps exceeding 0.32 cm (1/8 in.) in width between the secondary seal and the tank wall shall not exceed 21.2 cm^2 per meter of tank diameter (1.0 $in.^2$ per ft of tank diameter), as determined by the method in §XX.9750(c).

(3) All openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves, are:

(i) equipped with covers, seals, or lids in the closed position except when the openings are in actual use; and,

(ii) equipped with projections into the tank which remain below the liquid surface at all times.

(4) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;

(5) *Rim vents are set to open when the roof is being floated off the leg supports or at the manufacturer's recommended setting; and,*

(6) *Emergency roof drains are provided with slotted membrane fabric covers or equivalent covers which cover at least 90 percent of the area of the opening.*

(b) *The owner or operator of a petroleum liquid storage vessel with an external floating roof subject to this regulation shall:*

(1) *perform routine inspections semi-annually in order to insure compliance with part (a) of this section and the inspections shall include a visual inspection of the secondary seal gap;*

(2) *measure the secondary seal gap annually in accordaance with §XX.9750 when the floating roof is equipped with a vapor-mounted primary seal; and,*

(3) *maintain records of the types of volatile petroleum liquids stored, the maximum true vapor pressure of the liquid as stored, and the results of the inspections performed in subparagraphs (b)(1) and (2).*

(c) *The owner or operator of a petroleum liquid storage vessel with an external floating roof exempted from this regulation by §XX.9720(b)(3), but containing a petroleum liquid with a true vapor pressure greater than 7.0 kPa (1.0 psi), shall maintain records of the average monthly storage temperature, the type of liquid, and the maximum true vapor pressure for all petroleum liquids with a true vapor pressure greater than 7.0 kPa.*

(d) *Copies of all records under paragraphs (b) and (c) of this section shall be retained by the owner or operator for a minimum of 2 years after the date on which the record was made.*

(e) *Copies of all records under this section shall immediately be made available to the Director, upon verbal or written request, at any reasonable time.*

(f) *The Director may, upon written notice, require more frequent inspections or modify the monitoring and recordkeeping requirements, when necessary to accomplish the purposes of this regulation.*

DISCUSSION

Some discussion of "the area of gaps" is needed. The CTG sample regulation intended part (a)(2)(iii) to apply only to tanks equipped with vapor-mounted primary seals. The secondary seal gap measurement, as specified in part (b)(2) should be made annually. This measurement is only required where the primary seal has been determined to be a vapor-mounted type. For all other primary seal types, semi-annual visual inspection of the secondary seal is all that is required. However, if the state agency official feels that improper inspections are being conducted, he should then require a measurement of the secondary seal on any tank. It is important that this section allow the Director, at his discretion, to change the monitoring schedule such that he can demand gap measurements for nonvapor-mounted seals or more frequent gap measurements for vapor-mounted seals.

In order to determine equivalent effectiveness of part (a)(1)(ii), the state agency should require the owner or operator to submit test data, along with details of the test procedure. The agency will then be able to compare the submitted figures with those published in the CTG.

With respect to recordkeeping, the owner or operator should be required to maintain as a minimum:

1. records detailing all activities relating to any Compliance Schedule;

2. records of all monitoring (routine inspections and measurements);

3. records of the average monthly storage temperature, the type of liquid, and the maximum true vapor pressure of the liquid as stored for all volatile petroleum liquids;

   (i) having a true vapor pressure greater than 7.0 kPa (1.0 psi); and,

   (ii) stored in an external floating tank not equipped with a secondary seal or approved alternative.

This suggested regulation is not completely consistent with that for fixed roof tanks. In EPA-905/2-78-001, it was recommended that monthly temperature and vapor pressure data be kept for all liquids and tanks. Here, only those tanks holding a liquid with a true vapor pressure greater than 7.0 kPa and not equipped with a secondary seal or approved alternative are obligated to keep such records. The intention of this regulation is to keep track of those tanks which contain liquids with vapor pressures marginally below the minimum applicability. Since it is very difficult to estimate emissions from leaking storage tanks, it would not be useful for the owners or operators to collect physical property data for tanks complying with the regulation unless an exemption is being sought. In order to determine applicability, the state agency can determine the true vapor pressure "by using the average monthly storage temperature and typical Reid vapor pressure of the contained liquid or from typical available data on the contained liquid." The true vapor pressure of a crude oil with a Reid vapor pressure less than 13.8 kPa (2.0 psi) or whose physical properties preclude determination by the above method need not be reported.

It is again emphasized that the inspection and measurement of gaps does not apply to primary seals. Semi-annual visual inspection of the secondary seals is all that is required except in the case of vapor mounted primary seals, where an annual measurement of the secondary seal gaps is also required.

§XX.9740 Compliance Schedules.

(a) The owner or operator of a petroleum liquid storage vessel subject to this regulation shall meet the applicable increments of progress contained in the following schedule for installation of a secondary seal, closure, or other VOC emission reduction device:

(1) submit final plans for the emission control system before September 15, 1980;

(2) award contraxts for the emission control system before November 1, 1980;

(3) initiate onsite construction or installation of the emission control equipment before January 15, 1981;

(4) complete onsite construction or installation of the emission control equipment before May 15, 1981; and,

(5) achieve final compliance with §XX.9730 before July 1, 1981.

(b) The owner or operator of a source of volatile organic compounds subject to this regulation, may submit to the Director, and the Director may approve, a proposed alternative compliance schedule provided:

(1) the proposed alternative compliance schedule is submitted before September 15, 1980;

(2) the owner or operator provides information showing the need for an alternative schedule;

(3) the alternative schedule contains increments of progress;

(4) sufficient documentation and certification from appropriate suppliers, contractors, manufacturers, or fabricators is submitted by the owner or operator of the subject facility to justify the dates proposed for the increments of progress; and,

(5) final compliance is achieved as expeditiously as possible, but no later than the photochemical oxidant attainment date.

(c) The owner or operator of a source of VOC emissions subject to a compliance schedule of this section shall certify to the Director within 5 days after the deadline for each increment of progress, whether the required increment of progress has been met.

DISCUSSION

The regulation for floating roof storage tanks is written around an equipment specification. According to the EPA memorandum of November 3, 1978 on "Categorical Compliance Schedules for VOC Sources;" "Sources subject to equipment, operating, and/or maintenance standards have 1 year to comply." Therefore, the 52-week schedule is used in this regulation. Assuming July 1, 1980 as the effective day of the regulation presented here, the following progress increments are required:

1. Control Plant Submittal - September 15, 1980
2. Contract Award - November 1, 1980
3. Initiation of Construction - January 15, 1981
4. Construction Completed - May 15, 1981
5. Final Compliance - July 1, 1981

A paragraph for Alternative Compliance Schedules is necessary. The Director must be able to approve a separate schedule for any source if he finds that the 52-week compliance schedule is not feasible. Also, the owner or operator of a source of VOC emissions should be able to submit a proposed alternative schedule to the Director for review, as long as it is presented before September 15, 1980 and is properly documented.

EPA policy states that "If such an alternative compliance schedule would impact on attainment or maintenance of any ambient standard, then approval of the alternative schedule as an SIP revision would be required...Too many alternative schedules extending until December 31, 1982, might also prevent a state from showing reasonable further progress toward attainment..."

§XX.9750 Testing and Monitoring.

(a) The owner or operator of any volatile organic compound source required to comply with §XX.9730 shall, at his own expense, demonstrate compliance by the methods of this section or an alternative method approved by the Director.

(b) A person proposing to conduct a volatile organic compound emissions test shall notify the Director of the intent to test not less than 30 days before the proposed initiation of the tests so the Director may at his option observe the test. The notification shall contain the information required by, and be in a format approved by, the Director.

(c) Compliance with §XX.9730(a)(2)(iii) shall be determined by:

(1) physically measuring the length and width of all gaps around the entire circumference of the secondary seal in each place where a 0.32 cm (1/8 in.) uniform diameter probe passes freely (without forcing or binding against the seal) between the seal and tank wall; and,

(2) summing the area of the individual gaps.

DISCUSSION

The area of gaps exceeding 0.32 cm (1/8 in.) in width between the secondary seal and the tank wall should not exceed 21.2 cm^2 per meter of tank diameter (1.0 $in.^2$ per foot of tank diameter). If the tank is equipped with a metallic-type shoe or liquid-mounted seal, compliance can be determined by visual inspection. However, if the primary seal is of the vapor-mounted type, then compliance must be determined by physically measuring the length and width of the gaps around the entire circumference of the secondary seal. Only gaps greater than or equal to 0.32 cm (1/8 in.) shall be used in computing the gap area. The area of the gaps should be accumulated to determine compliance.

§XX.9800 PERCHLOROETHYLENE DRY CLEANING SYSTEMS

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§XX.9810 Definitions.

(a) For the purpose of this Regulation, the general definitions apply.

(b) For the purpose of this Regulation, the following definition also applies:

(1) "Dry cleaning facility" means a facility engaged in the cleaning of fabrics in an essentially nonaqueous solvent by means of one or more washes in solvent, extraction of excess solvent by spinning, and drying by tumbling in an airstream. The facility includes but is not limited to any washer, dryer, filter and purification systems, waste disposal systems, holding tanks, pumps, and attendant piping and valves.

§*XX.9820* *Applicability.*

This Regulation applies to all perchloroethylene dry cleaning facilities located in the following counties:

DISCUSSION

The CTG recommends specific exemptions from the installation of a carbon adsorber or other control devices where one cannot be accommodated because of inadequate space or unavailability of sufficient steam capacity to desorb adsorbers. Since this exemption applies only to the installation of a control device and not to the operation and maintenance provisions, it has been included in the specific process section (XX.9830) rather than this section.

§XX.9830 ***Provisions for Specific Processes.***

(a) The owner or operator of a perchloroethylene dry cleaning facility subject to this regulation shall:

(1) vent the entire dryer exhaust through a properly functioning carbon adsorption system or equally effective control device;

(2) emit no more than 100 ppmv, of volatile organic compounds from the dryer control device before dilution;

(3) immediately repair all components found to be leaking liquid volatile organic compounds;

(4) cook or treat all diatomaceous earth filters so that the residue contains 25 kg or less of volatile organic compounds per 100 kg of wet waste material;

(5) reduce the volatile organic compounds from all solvent stills to 60 kg or less per 100 kg of wet waste material;

(6) drain all filtration cartridges, in the filter housing, for at least 24 hours before discarding the cartridges; and

(7) when possible, dry all drained cartridges without emitting volatile organic compounds to the atmosphere.

(b) The provisions of subparagraphs (a)(1) and (a)(2) are not applicable to: perchloroethylene dry cleaning facilities which are coin-operated; facilities where an adsorber cannot be accommodated because of inadequate space; or facilities with insufficient steam capacity to desorb adsorbers. The Director may exclude other facilities from the scope of subparagraphs (a)(1) and (a)(2) if it is demonstrated that other hardships justify such an exclusion.

DISCUSSION

For vapor emissions from dryers, the CTG document for perchloroethylene dry cleaning systems, EPA-450/2-78-050, recommends that all exhaust gases be vented through a carbon adsorber or other control device and that the perchloroethylene concentration leaving the adsorber or other control devices not exceed 100 ppmv before dilution.

It should be noted that many existing regulations for VOC emissions through adsorption control devices specify the outlet concentration at no more than 25 ppmv. The authors of the CTG document feel that "carbon adsorbers tested by the EPA have achieved much better control than 100 ppmv outlet concentration. This figure was chosen because it is high enough to indicate 'breakthrough' of the carbon bed. Breakthrough is a good indicator to enforcement officials of improper maintenance or operation of the adsorber."

A regulation prohibiting liquid leaks is readily enforceable. Such leaks can easily be detected by sight. Periodic inspections by the regulatory agency officer can be an effective means of preventing this source of VOC emissions. Section XX.9850 (b) list inspection points for liquid leaks.

RACT is straightforward for filter and distillation wastes. The test method is well documented and fulfills the requirements of EPA. The CTG states that: "For determining the amount of solvent in filter materials (muck and distillation waste) the test method described by the American National Standards Institute in the paper 'Standard Method of Test for Dilution of Gasoline-Engine Crankcase Oils' should be used. To be derived are the kilograms of VOC per kilogram of discarded muck. This method can be used for the enforcement of the performance requirements of RACT."

Paragraph (b) of this section allows the Director to consider specific instances where it is technologically infeasible to locate or operate a control device. It is expected that some older facilities in crowded urban areas will not be able to install control equipment because of physical space constraints. In addition, some facilities which have the space may not have the steam generating ability or access to sufficient quantities of steam for carbon adsorption bed regeneration. In these situations, the owner or operator is responsible for providing the Director with sufficient documentation to confirm that no reasonable alternatives are available. The Director may then decide to allow the source to continue operations provided it continues to comply with subparagraphs (a)(3) through (a)(7).

The exemptions provided in paragraph (b) are explictly recommended in the CTG. In addition, coin-operated plants have been delineated to prevent confusion as to the coverage for these sources. Coin-operated systems have special problems. There is generally no steam demand at coin-ops and thus no steam boiler. In most cases, the steam necessary to desorb a carbon bed does not exist at these plants and necessary space for an adsorber is not available.

§XX.9840 *Compliance Schedules.*

(a) *The owner or operator of a perchloroethylene dry cleaning facility subject to §XX.9830 (a)(1) or (a)(2) of this regulation must meet the applicable increments of progress in the following schedule:*

(1) *Award contracts, issue purchase orders, or otherwise order the emission control system and process equipment, before January 1, 1981;*

(2) *Complete installation of the emission control and process equipment, before December 1, 1981; and,*

(3) *Achieve final compliance, determined in accordance with §XX.9850, before January 1, 1982;*

(4) *In the event that equipment cannot be delivered prior to November 1, 1981 and the owner or operator placed the order prior to January 1, 1981, the final compliance date shall be 60 days following delivery of the equipment.*

(b) *The owner or operator of a perchloroethylene dry cleaning facility subject to this regulation must comply with the operational and maintenance provisions of §XX.9830 (a)(3) through (a)(7) by January 1, 1981.*

(c) *The owner or operator of a perchloroethylene dry cleaning facility subject to this regulation may submit to the Director, and the Director may approve, a proposed alternative compliance schedule provided:*

(1) *The proposed alternative compliance schedule is submitted before September 15, 1980;*

(2) *The owner or operator provides information showing the need for an alternative schedule;*

(3) *The alternative compliance schedule contains increments of progress;*

(4) *Sufficient documentation and certification from appropriate suppliers, contractors, manufacturers, or fabricators is submitted by the owner or operator of the subject facility to justify the dates proposed for the increments of progress; and*

(5) *Final compliance is achieved as expeditiously as possible and before the photochemical oxidant attainment date.*

DISCUSSION

Assuming July 1, 1980 as the effective date of the regulation, compliance with the operation and maintenance provision of the regulation shall be attained by January 1, 1981. The awarding of a contract or issuance of a purchase order for an emission control system is also required by January 1, 1981. Normally installation of the emission control system is required by December 1, 1981 with final compliance occurring by January 1, 1982. However, if delivery of the control equipment cannot be made prior to November 1, 1981, final compliance does not have to be demonstrated until 60 days after the delivery date. The last provision is included because the large number of carbon adsorption units expected to be ordered may exceed the manufacturers' capacity to deliver these units.

A paragraph for Alternative Compliance Schedules is included. The owner or operator of the emission source should be allowed to submit a proposed alternative schedule to the Director for review as long as it is presented before September 15, 1980 and it is properly documented. The Director must be able to approve a separate schedule for any source if he finds that compliance with paragraphs (a) or (b) is not feasible.

EPA states, however, that "if such an alternative compliance schedule would impact on attainment or maintenance of any ambient standards, then approval of the alternative compliance schedule as an SIP revision would be required....Too many alternative schedules extending until December 31, 1982, might also prevent a state from showing reasonable further progress toward attainment..."

§XX.9850 *Testing and Monitoring.*

(a) Compliance with §XX.9830 (a)(1), (a)(6) and (a)(7) shall be determined by means of a visual inspection.

(b) Compliance with §XX.9830 (a)(3) shall be determined by means of a visual inspection of the following components:

(1) Hose connections, unions, couplings and valves;

(2) Machine door gaskets and seatings;

(3) Filter head gasket and seating;

(4) Pumps;

(5) Base tanks and storage containers;

(6) Water separators;

(7) Filter sludge recovery;

(8) Distillation unit;

(9) Diverter valves;

(10) Saturated lint from lint basket; and

(11) Cartridge filters.

(c) Compliance with §XX.9830 (a)(2) shall be determined by:

(1) a test consistent with EPA Guideline Series document, "Measurement of Volatile Organic Compounds," EPA-450/2-78-041; or

(2) the proper installation, operation, and maintenance of equipment which has been demonstrated to be adequate to meet the emission limits in §XX.9830 (a)(2).

(d) Compliance with §XX.9830 (a)(4) and (a)(5) shall be determined by means of the procedure in the American National Standards Institute paper, "Standard Method of Test for Dilution of Gasoline Engine Crankcase Oils."

DISCUSSION

The test method for liquid leaks is a straightforward visual observation for liquid perchloroethylene which is dripping or leaking from the dry cleaning equipment.

The test method for determining the amount of solvent in filter materials (muck and distillation waste) is described by the American National Standards Institute in the paper "Standard Method of Test for Dilution of Gasoline-Engine Crankcase Oils." The results are to be expressed in kilograms of VOC per kilogram of discarded filter muck. This method can be used for the enforcement of §XX.9830(a)(4) and (a)(5).

Testing for VOC emissions from a dryer control device may be accomplished by any of the following potential methods:

1. Measuring organic carbon by the procedures described in the EPA Guideline Series document, "Measurement of Volatile Organic Compounds," EPA-450/2-78-041; and converting to ppmv of VOC;

2. A draft reference method for determining ppm of halogenated organic compounds (which includes perchloroethylene) presently exists and should be proposed during early 1980;

3. The carbon adsorbers tested by EPA have achieved much better control than 100 ppm outlet concentration. It should be possible for vendors to demonstrate that their equipment, if properly installed and operated, will be adequate to meet the emission limits. If the carbon adsorber has been properly maintained and breakthrough has not occurred, the carbon adsorber would be in compliance based on previous equipment performance.

The first two methods are very accurate, but are probably too costly for most routine compliance determinations. These methods could be used to document a violation by a large facility. For routine compliance determinations the third method is probably most useful.

§XX.9900 LEAKS FROM GASOLINE TANK TRUCKS AND VAPOR COLLECTION SYSTEMS

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§XX.9910 Definitions.

(a) For the purpose of this Regulation, the general definitions apply.

(b) For the purpose of this Regulation, the following definitions also apply:

(1) "Bottom filling" means the filling of a tank truck or stationary storage tank through an opening that is flush with the tank bottom.

(2) "Gasoline" means a petroleum distillate having a Reid vapor pressure of 27.6 kPa (4 psi) or greater that is used as fuel for internal combustion engines.

(3) "Gasoline Tank Truck" means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities, bulk gasoline plants or bulk gasoline terminals.

(4) "Gasoline Dispensing Facility" means any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage tanks.

(5) "Bulk gasoline terminal" means a gasoline storage facility which receives gasoline from refineries primarily by pipeline, ship, or barge, and delivers gasoline to bulk gasoline plants or to commerical or retail accounts primarily by tank truck; and has a daily throughput of more than 76,000 liters (20,000 gal) of gasoline.

(6) "Bulk gasoline plant" means a gasoline storage and distribution facility with an average throughput of 76,000 liters (20,000 gal) or less which receives gasoline from bulk terminals by gasoline tank truck, stores it in tanks, and subsequently dispenses the gasoline via account trucks to local farms, businesses, and gasoline dispensing facilities.

(7) "Vapor Collection System" means a vapor transport system which uses direct displacement by the gasoline being transferred to force vapors from the vessel being loaded into either a vessel being unloaded or a vapor control system or vapor holding tank.

(8) "Vapor Control System" means a system that is designed to control the release of volatile organic compounds displaced from a vessel during transfer of gasoline.

§XX.9920 *Applicability.*

This Regulation is applicable to all vapor collection and control systems at bulk plants, bulk terminals and gasoline dispensing facilities, and to all gasoline tank trucks equipped for gasoline vapor collection located in the following counties:

DISCUSSION

The CTG document for Leaks from Gasoline Tank Trucks and Vapor Collection Systems is a fairly straight forward guidance document primarily concerned with defining and detecting VOC leaks during loading and unloading operations by gasoline tank trucks at bulk plants, bulk terminals and gasoline dispensing facilities. The guidance is applicable to all bulk plants, bulk terminals, gasoline dispensing facilities and tank trucks which are required to have a vapor collection system. Also, all gasoline dispensing facilities with Stage I controls and, most importantly, all tank trucks loading or unloading at any of these facilities are effected by this guidance.

There are no exemptions based on the size of the facility, number of trucks or total quantity of VOC emissions in the CTG document.

§XX.9930 Provisions for Specific Processes.

(a) No person shall allow a gasoline tank truck subject to this regulation to be filled or emptied unless the gasoline tank truck:

(1) is tested annually according to the test procedure referenced in §XX.9950(c);

(2) sustains a pressure change of no more than 750 pascals (3 in. of H_2O) in 5 min when pressurized to a gauge pressure of 4,500 pascals (18 in. of H_2O) or evacuated to a gauge pressure of 1,500 pascals (6 in. of H_2O) during the testing required in subparagraph (a)(1) of this section;

(3) is repaired by the owner or operator and retested within 15 days of testing if it does not meet the criteria of subparagraph (a)(2) of this section;

(4) displays a sticker near the Department of Transportation Certification plate required by 49 CFR 178.340-10b, which:

(i) shows the date that the gasoline tank truck last passed the test required in subparagraphs (a)(1) and (a)(2) of this section;

(ii) shows the identification number of the gasoline tank truck tank; and,

(iii) expires not more than 1 year from the date of the leak tight test.

(b) The owner or operator of a vapor collection system subject to this regulation shall:

(1) design and operate the vapor collection system and the gasoline loading equipment in a manner that prevents:

(i) gauge pressure from exceeding 4,500 pascals (18 in. of H_2O) and vacuum from exceeding 1,500 pascals (6 in. of H_2O) in the gasoline tank truck;

(ii) a reading equal to or greater than 100 percent of the lower explosive limit (LEL, measured as propane) at 2.5 centimeters from *all points on the perimeter of a potential leak source when measured by the method referenced in §XX.9950(d) during loading or unloading operations at gasoline dispensing facilities, bulk plants and bulk terminals;*

(iii) avoidable visible liquid leaks during loading or unloading operations at gasoline dispensing facilities, bulk plants and bulk terminals; and,

(2) within 15 days, repair and retest a vapor collection or control system that exceeds the limits in subparagraph (b)(1) of this section.

(c) The Director may, at any time, monitor a gasoline tank truck, vapor collection system, or vapor control system, by the method referenced in §XX.9950(d), to confirm continuing compliance with paragraphs (a) or (b) of this section.

(d) The Director may, upon written notice modify the testing frequency of paragraph (a).

DISCUSSION

The approach taken in the CTG document to control leaks from gasoline tank trucks, vapor collection systems, and vapor control systems is a program of monitoring and maintenance. No emission limits are given in this regulation, since none are specified in the CTG document.

The owner or operator of a gasoline tank truck will be required to have each tank and their vapor collection systems pass a leak tightness test annually. The CTG document does not address who is responsible for administering and performing the test. The sample regulation provides for repair and retesting of a component if it is not leak tight.

There are several possible methods of operating a gasoline tank truck certification program; a program may be operated entirely by a state or local agency, the state or local agency may license specific testing facilities, or the testing may be done by the owners and operators of the gasoline tank truck. In the last example, the state or local agency could issue certification stickers based on information received under the certification requirement of §XX.9960; or the owner or operator of a gasoline tank truck may perform and administer the testing, including supplying the stickers, with only monitoring by the state and local agency as provided for in §XX.9930(c).

The vapor collection system must be designed and operated to prevent gauge pressure in the tank truck from exceeding 4,500 pascals (18 in. of H_2O) and prevent vacuum from exceeding 1,500 pascals (6 in. of H_2O). This is to assure the accuracy of the certification test results.

In addition to the annual leak tightness tests the CTG document recommends periodic monitoring for leaks by the owner or operator and spot checks by regulatory agencies, "as needed." The "as needed" should be defined, at least initially, as some percentage of the certified fleet. The monitoring is done during loading and unloading operations using the Combustible Gas Detection Procedure given in Appendix B of the "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems," CTG document, EPA-450/2-78-051. If the combustible gas detection procedure measures a VOC leak at equal to or greater than 100 percent of the LEL, the leak is to be repaired within 15 days and the equipment must pass either the Combustible Gas Detection Procedure or the Pressure-Vacuum test.

Presently, there is limited information available on the amount of monitoring necessary to ensure that leaks are kept to the limits described above. Therefore, regulations should allow for modifications in the monitoring schedule when experience proves it to be either inadequate or excessive. If, after over 1 year of monitoring, i.e., at least two complete annual checks, the operator of an affected facility feels that modifications of the requirements are in order, he may request in writing to the air pollution control officer that a revision be made. The submittal should include data that have been developed to justify any modifications in the monitoring schedule. On the other hand, if the air pollution control officer finds an excessive number of leaks during an inspection, or if the operator finds an excessive number of leaks during scheduled monitoring, consideration should be given to increasing the frequency of inspections.

The intent of the wording in paragraph (a) is to make owners or operators of bulk terminals, bulk plants, and gasoling dispensing facilities, as well as the owner and operator of the gasoline tank trucks, responsible for allowing VOC emissions from loading and unloading of gasoline. Responsibility should be limited to checking for a valid sticker in most cases.

§XX.9940 Compliance Schedules.

(a) The owner or operator of a gasoline tank truck subject to this regulation must meet the following increments of progress:

(1) Submit plans to the Director for operating and maintenance procedures to implement §XX.9930 and §XX.9950 before September 15, 1980;

(2) Issue purchase orders or contracts for all needed test equipment before November 1, 1980;

(3) Commence certification of gasoline tank trucks before July 1, 1981; and,

(4) Complete initial certification of all gasoline tank trucks before January 1, 1982.

(b) The owner or operator of a gasoline tank truck subject to this regulation, may submit to the Director, and the Director may approve, a proposed alternative compliance schedule provided:

(1) The proposed alternative compliance schedule is submitted before September 15, 1980;

(2) The owner or operator provides information showing the need for an alternative schedule;

(3) The alternative compliance schedule contains increments of progress;

(4) Sufficient documentation and certification from appropriate suppliers, contractors, manufacturers, or fabricators is submitted by the owner or operator to justify the dates proposed for the increments of progress; and

(5) Final compliance is achieved as expeditiously as possible and before the photochemical oxidant attainment date.

(c) The owner or operator of a gasoline tank truck subject to a compliance schedule of this section shall certify to the Director within 5 days after the deadline for each increment of progress, whether the required increment of progress has been met.

DISCUSSION

The RACT for this source category is the establishment of equipment maintenance standards. Therefore, the 1-year compliance schedule set forth in an EPA memorandum, dated November 3, 1978, "Categorical Compliance Schedules for VOC Sources" is applicable. Assuming July 1, 1980, as the effective date of this regulation, the following progress increments would be required.

1. Plan necessary operating and maintenance procedures by September 15, 1980;
2. Issue Purchase Orders for all necessary test equipment by November 1, 1980;
3. Commence certification of gasoline tank trucks before July 1, 1981; and
4. Complete initial certification of all gasoline tank trucks by January 1, 1982.

The last two dates should be adjusted to insure that most of the annual certification testing occurs just prior to the photochemical oxidant season.

§XX.9950 *Testing and Monitoring.*

(a) *The owner or operator of a volatile organic compound source shall, at his own expense, demonstrate compliance with XX.9930 by the methods of part (c) of this section, or an alternative method approved by the Director. All tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing or tank truck maintenance and testing.*

(b) *The owner or operator of a gasoline tank truck subject to this regulation must notify the Director in writing of the date and location of a certification test at least 10 days before the anticipated test date.*

(c) *Test procedures to determine compliance with §XX.9930 must be approved by the Director and consistent with the test procedures described in Appendix A of the OAQPS Guideline Series document, "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems," EPA-450/2-78-051, or an equivalent procedure approved by the Director.*

(d) *Monitoring to confirm the continuing existence of leak tight conditions shall be consistent with the procedures described in Appendix B of the OAQPS Guideline Series document, "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems," EPA-450/2-78-051.*

DISCUSSION

The recommended compliance test methods referenced in §XX.9950(c) can be used to determine the leak tightness of a gasoline tank truck. Pressure and vacuum are applied to the tanks of a gasoline delivery truck and the change in pressure/vacuum is recorded after a specific period of time. The recommended test procedure in effect defines a "leak tight condition." The recommended compliance procedure is actually an equipment performance criteria rather than a true emission measurement test. However, emissions from a truck tank can be estimated from the required degree of leak tightness. Acceptable modifications of the pressure/vacuum test are described on page 6 of the referenced document. These alteratives include using a liquid to create the required pressure and vacuum or conducting the test with gasoline vapors in the tank under specific conditions. The compliance schedule section of this regulation provides a 6-month period for owners and operators to complete the initial leak tight testing of their fleets.

Thereafter, all fleets should complete their testing before the beginning of the seasonal photochemical oxidant period in their region.

§XX.9960 Recordkeeping and Reporting.

(a) The owner or operator of a source of volatile organic compounds subject to this regulation shall maintain records of all certification testing and repairs. The records must identify the gasoline tank truck, vapor collection system, or vapor control system; the date of the test or repair; and, if applicable, the type of repair and the date of retest. The records must be maintained in a legible, readily available condition for at least 2 years after the date the testing or repair was completed.

(b) The records of certification tests required by paragraph (a) of this section, shall, as a minimum, contain:

(1) the gasoline tank truck tank identification number;

(2) the initial test pressure and the time of the reading;

(3) the final test pressure and the time of the reading;

(4) the initial test vacuum and the time of the reading;

(5) the final test vacuum and the time of the reading;

(6) at the top of each report page shall be the company name, and the date and location of the tests on that page; and,

(7) name and the title of person conducting the test.

(c) The owner or operator of a gasoline tank truck subject to this regulation must certify to the Director annually that the gasoline tank truck has been tested by an applicable method referenced in §XX.9950. The certification must include:

(1) the name and address of the company and the name and telephone number of responsible company representative over whose signature the certification is submitted; and,

(2) a copy of the information recorded to comply with paragraph (b) of this section.

(d) Copies of all records and reports under this section shall immediately be made available to the Director, upon verbal or written request, at any reasonable time.

DISCUSSION

The amount of reporting required by a state or local agency is dependent on several factors. First, the type of certification program which is implemented can be designed with either a maximum involvement in the testing and administration by the agency and minimum of reporting necessary on the part of persons affected by this regulation or a minimum involvement by the agency in the testing and administration and much heavier emphasis on reporting and recordkeeping by the companies involved. Second, the emphasis on reporting and recordkeeping will vary with the amount of monitoring done by the regulatory agency.

It is important to note that in order to make this type of regulation effective, a consistent program of testing, monitoring, recordkeeping, and reporting must be implemented. Although the emphasis on the various components of the program may be changed, elimination of any one of the components will result in an ineffective program.

APPENDIX A

§XX.8000 GENERAL PROVISIONS

§XX.8010 Applicability.

(a) These Regulations are effective after June 30, 1980.

(b) These Regulations are not applicable to:

(1) Sources whose emissions of volatile organic compounds are less then 6.8 kilograms (15 pounds) per day and less than 1.4 kilograms (3 pounds) per hour, provided the emission rates are determined and certified before September 15, 1980 in a manner approved by the Director.

(2) Sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance (such as research facilities, pilot plant operations, and laboratories) unless;

(i) the operation of the source is an integral part of the production process; or,

(ii) the emissions from the source exceed 363 kilograms (800 pounds) in any calendar month; or,

(iii) the exemption is denied in writing by the Director.

(c) Part (b) of this section does not apply to the following regulations:

§XX.9000 Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment

§XX.9600 Graphic Arts (Rotogravure and Flexography)

§XX.9700 Petroleum Liquid Storage in External Floating Roof Tanks

§XX.9800 Perchloroethylene Dry Cleaning Systems

§XX.9900 Leaks from Gasoline Tank Trucks and Vapor Collection Systems

DISCUSSION

Some discussion is required in order to determine the applicable size of operation or amount of pollutant emission. In the memorandum of February 24, 1978, on "Criteria for Approval of 1979 SIP Revisions," two separate regulatory philosophies are presented. One, for major urban areas (population greater than 200,000), states that the regulation must reflect RACT for virtually all sized sources covered by the CTG. The other, for rural nonattainment areas, requires RACT only for large sources (more than 100 ton/yr potential emissions).

Thus, applicability exemptions should be presented for both urban and rural areas where necessary. In urban areas, the size exemption should be similar to the one presented in EPA-905/2-78-001, "Regulatory Guidance for Control of Volatile Organic Compound Emissions from 15 Categories of Stationary Sources":

> In urban areas (population > 200,000), these regulations will not apply to sources whose emissions of volatile organic compounds are not more than 6.8 kilograms (15 pounds) in any 1 day, not more than 1.4 kilograms (3 pounds) in any 1 hour, provided the emission rates are determined and certified before March 1, 1980, in a manner approved by the Director.

The size limitation contained in the above paragraph is applicable to the following industrial categories:

§XX.9100 Surface Coating of Miscellaneous Metal Parts and Products

§XX.9300 Surface Coating of Flat Wood Paneling

§XX.9400 Manufacture of Synthesized Pharmaceutical Products

§XX.9500 Manufacture of Pneumatic Rubber Tires

The general size limitation does not apply to the other CTG categories because either the intent of the regulation is to control VOC leaks (e.g., Petroleum Refinery Equipment, External Floating Roof Tanks, Gasoline Tank Trucks and Vapor Collection Systems) or the applicability section of the specific regulation has a different size limitation (e.g., Perchloroethylene Dry Cleaning Systems and Graphic Arts). State and local agencies should carefully review new general regulatory language to insure that it is consistent with previous regulations. Please note that David G. Hawkins' memo dated September 11, 1978, "Continuity of SIP Regulations," is pertinent to this topic.

This section also provides an exemption for research facilities, pilot plant operations, and laboratories if they meet the criteria of part (b)(2). It is not EPA's intent to regulate VOC sources within a facility if the sources are being used to develop process changes that may reduce VOC emissions from actual production equipment.

Part (b)(2)(ii) suggests an emission limit of 363 kilograms (800 lbs) in any calendar month. This quantity was used by the EPA when it promulgated hydrocarbon regulations for a state in Region I. It also appeared in EPA-905/2-78-001, "Regulatory Guidance for Control of Volatile Organic Compound Emissions from 15 Categories of Stationary Sources." The important point here is that some quantity should be included in a state's VOC regulation to insure authority to require control on continuous large emissions from these types of sources. Since these sources may emit large quantities of VOC intermittently, it is recommended that the emission averaging period be no shorter than 1 month.

§XX.8030 *Inspection, Maintenance and Operating Procedures.*

(a) *The owner or operator of a facility subject to these regulations must make available to the Director an Inspection and Maintenance Manual for all control equipment before the final compliance date required under the appropriate compliance schedule section of the specific regulation. The manual shall include all normal maintenance required and the period or intervals at which the maintenance or inspection is to be completed. Normal maintenance shall include the calibration of monitoring equipment.*

(b) *The owner or operator of a facility subject to these regulations must keep a written record of all maintenance or repair work performed on the control equipment for 2 years after the date on which the maintenance or repair work is completed. This record shall be made available to the Director upon request.*

(c) *The owner or operator of a facility subject to these regulations must submit an Operators Manual to the Director before the final compliance date in the appropriate compliance schedule section. This manual shall be suitable for training a person to properly operate the control equipment.*

(d) *Only trained operators shall startup and shutdown the control equipment.*

DISCUSSION

This regulation is included to insure that proper control equipment maintenance and operation procedures are followed. In addition, a comparison of maintenance requirements in the manual with actual maintenance records can help state and local agencies determine liability in the event of a malfunction or breakdown.

Depending on the importance that a state or local agency places on control equipment inspection, maintenance and operating procedures, the agency may want to substitute, for the phrase in part (a), "must make available to the Director," the phrase, "must submit to and have approved by the Director." This wording would give the agency much more control in defining normal maintenance. Conversely, a state or local agency may substitute for the phrase in part (c), "must submit an Operators Manual to the Director," another phrase, such as, "must make available to the Director."

The "appropriate compliance schedule section of the specific regulation" is the compliance schedule which applies to the specific control device discussed in the Inspection and Maintenance Manual. If more than one control device is included in the manual the schedule with the earliest final compliance date is the appropriate one.

Part (d) of this section of the regulation is included because startup and shutdown of control equipment by personnel unfamiliar with the operation of the control equipment has been a cause of malfunctions and breakdowns in the past. Trained operators in this case means personnel familiar with the operation of the control equipment.

§XX.8040 Breakdown, Malfunction and Operation Changes.

(a) *Breakdown, malfunction. The owner or operator of an emission source shall notify the Director immediately (1) of a breakdown or malfunction of more than 1 hr duration of any control equipment; and, (2) of a breakdown or malfunction of any process equipment, if the breakdown or malfunction causes an increase in the emission of air contaminants. At the time of notification or as soon thereafter as possible, the owner or operator shall also notify the Director of the cause of the breakdown or malfunction and the estimated duration. The owner or operator shall notify the Director when the breakdown or malfunction is over.*

(b) *Operation changes. In a shutdown, startup, breakdown or malfunction, the owner or operator shall immediately take all practical steps to modify operations to maintain the emission of air contaminants within emission limitations. The Director may require feasible and practical modifications in the operation to reduce emissions of air contaminants to within emission limitations. No affected facility which has an unreasonable breakdown or malfunction frequency of control equipment shall be permitted to operate. Nothing in this regulation shall permit the operation of an affected source which may cause an immediate public health hazard.*

(c) *Records. The owner or operator of an affected source shall maintain records of the occurrence and duration of any breakdown, or malfunction in operation of the source or any air emission control equipment. The owner or operator shall maintain records of every period of time in which a continuous monitoring system or monitoring device is inoperative. These records shall be retained for at least 2 years following the date of the shutdown, startup, breakdown, or malfunction. These records shall be made available to the Director upon request.*

(d) *Monitoring Equipment. The owner or operator of a continuous monitoring system or monitoring device shall notify the Director of a shutdown, breakdown or malfunction of more than 1 hour duration of the device or system.*

(e) *Emissions during startup, shutdown, breakdown, or malfunction that exceed emission limitations in the State Implementation Plan constitute violations of that plan.*

DISCUSSION

This section requires the immediate notification to the Director in the event of a breakdown or malfunction of any air pollution control device or of any process equipment if it causes an increase in the emission of air contaminents. This section allows the Director to initiate an investigation into the possibility of a violation of applicable regulations and to respond to any citizen complaints.

According to EPA guidance all emissions that exceed emission limitations during startup, shutdown, breakdown, or malfunction of process or control equipment should be considered a violation of the SIP. EPA policy states that, "any malfunction provisions must provide for the commencement of a proceeding to notify the source of its violation and to determine whether enforcement action should be undertaken for any period of excess emissions, whether due to malfunction or otherwise." However, the guidance does imply that "enforcement discretion" should be used in cases where there is a sudden and unavoidable malfunction that is entirely beyond the control of the owner or operator.

The manual entitled "Workshop on Requirements for Nonattainment Area Plans" offers some guidelines on this subject. A copy of the applicable sections is provided at the end of this discussion.

The first key point made in the workshop manual is that the malfunction provision cannot be the type that provides an automatic exemption where a malfunction is alleged by a source. The burden of proof must be placed on the source.

Another point is that there are three possible options for a malfunction provision depending on the projected attainment date for the ambient air quality standards.

The first option applies when the SIP calls for attainment of the ambient air quality standards for VOC by 1982. Any malfunction provision must then provide for the commencement of a proceeding to notify the source of its violation. A question arises as to how might the regulatory agency be aware of a malfunction violation. One way, of course, is to observe the violation during normal inspections. However, for VOC emissions, such sightings are not always possible due to the invisibility of many of the compounds.

The other course of action is for the source to report its malfunction and follow the notifying procedure in the hope of being subsequently exonerated. This situation of "guilty until proven innocent" may discourage many violators from reporting malfunctions. The regulatory agency needs to work with industry toward understanding and solving the problems that result in malfunctions and breakdowns. The source, when reporting the malfunction occurance, must also submit appropriate information concerning the malfunction or breakdown. EPA has presented, in a memorandum entitled "Comments on Regulatory Guidance for Control of VOC Emissions from 15 Categories of Stationary Sources Final Report," some suggestions on the reporting requirements:

> Breakdown, malfunction. The owner or operator of an emission source shall notify the Director immediately of a breakdown or malfunction of more than 1 hour duration of any control equipment and, if the breakdown or malfunction causes an increase in the emission of air contaminants, of a breakdown or malfunction of any process equipment. At the time of notification or as soon thereafter as possible, the owner or operator shall also notify the Director of the cause of the breakdown or malfunction and the estimated duration. The owner or operator shall notify the Director when the breakdown or malfunction is over.

Then, based on the information submitted by the source, the State must determine whether additional enforcement action is necessary by considering the five factors outlined in the "workshop" guideline.

The second and third options for a malfunction provision are applicable to the SIP's which will not be able to demonstrate attainment of ambient air quality standards for VOC's by December 31, 1982.

The second option is simply not to provide any malfunction provision at all.

The third option is very similar to existing malfunction provisions in most state regulations. The source is given the opportunity to demonstrate that the excess emissions resulted from an unavoidable breakdown. The reporting requirements and the evaluation procedures are the same as outlined in the first option above. The key point is that until the information reported by the source is evaluated by the state, issuance of a notice of violation is not required. If the source does not sustain its burden of proof, enforcement proceedings must then be initiated. If the source is able to demonstrate that the malfunction was genuinely unavoidable, it will not constitute a violation of the emission limitation.

The "workshop" guidelines do not allow for a shutdown-startup provision. "Any activity or event which can be foreseen and avoided, or planned, falls outside of the definition of sudden and unavoidable breakdown of equipment." Therefore, any emission in excess of an emission limitation due to phasing in and out of process equipment or due to routine maintenance procedures will be in violation of the regulations."

The regulations should provide some flexibility for two unavoidable situations which are not malfunctions. First, in certain circumstances, it is necessary to bypass the control equipment to avoid endangering life or sustaining severe property damage. Second, occasionally excess emissions result from process fluctuations that are unavoidable. In both these cases, the agency's and source's responsibilities are the same as presented under MALFUNCTION, BREAKDOWN.

Many of the foregoing statements and the wording of §XX.8040 are based on interpretations of EPA policy statements which appear in the "Workshop on Requirements for Nonattainment Area Plans." The Malfunction and Exemption Provision section of the Workshop, which appears below, is included in this discussion as a basis for interpretation of the sample regulation.

NONATTAINMENT PLAN REVISIONS

MALFUNCTION AND EXEMPTION PROVISIONS

Several of the existing State Implementation Plans (SIP) provide for an automatic emission limitation exemption during periods of excess emissions due to start-up, shutdown, or malfunction. Generally, EPA agrees that the imposition of a penalty for sudden and unavoidable malfunctions caused by circumstances entirely beyond the control of the owner and/or operator is not appropriate under certain conditions. However, since the SIPs must provide for attainment and maintenance of the national ambient air quality standards, SIP provisions on malfunctions must be narrowly drawn. (SIPs may, or course, omit any provision on malfunctions.)

I. AUTOMATIC EXEMPTION APPROACH

If a nonattainment plan revision contains a malfunction provision, it cannot be the type that provides for automatic exemption where a malfunction is alleged by a source. Automatic exemptions might aggravate air quality so as to result in not providing for attainment of the ambient air quality standards as required by Section 172 of the Clean Air Act, as amended. Additional grounds for disapproving a SIP that includes the automatic exemption approach are discussed in more detail at 42 FR 58171 (November 8, 1977) and 42 FR 21372 (April 27, 1977). As a result, EPA will disapprove any nonattainment plan revision that provides for an automatic exemption in those instances where a source claims excess emissions were caused by start-up, shutdown, or malfunction.

II. ENFORCEMENT DISCRETION APPROACH--SIP EMISSION LIMITATION ADEQUATE TO ATTAIN AMBIENT STANDARDS

EPA could approve nonattainment plan submittals which incorporate the "enforcement discretion approach." Such plans would include a requirement that places the burden on the source of demonstrating to the appropriate State agency's satisfaction that the excess emissions, though constituting a violation, were due to an unavoidable malfunction. For nonattainment plan revisions that provide for attainment of the ambient air quality standards for a pollutant by 1982, any malfunction provisions must provide for the commencement of a proceeding to notify the source of its violation and to determine whether enforcement action should be undertaken for any period of excess emissions, whether due to malfunctions or otherwise. (The term "excess emission" means air emission rate which exceeds any applicable emission limitation.)

Commencement of such a proceeding could be by issuance of a notice of violation (or some equivalent State mechanism) with the source being provided the opportunity to establish that the violation was due to an unavoidable malfunction. The malfunction provision should provide that the burden is entirely upon the source to establish that the excess emissions resulted from a true malfunction. (A malfunction is defined as a sudden and unavoidable breakdown of process or air pollution control equipment.)

Based on information submitted by the source, the State must determine whether additional enforcement action is necessary. The following factors must, at a minimum, be considered:

1. The air pollution control equipment, process equipment, or processes were at all times maintained and operated, to the maximum extent practicable, in a manner consistent with good practice for minimizing emissions;

2. Repairs were made in an expeditious fashion when the operator knew or should have known that applicable emission limitations were being exceeded. Off-shift and overtime labor must have been utilized to insure that such repairs were made as expeditiously as possible;

3. The amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions;

4. All possible steps were taken to minimize the impact of the excess emissions on ambient air quality; and

5. The excess emissions are not part of a recurring pattern indicative of inadequate design, operation, or maintenance.

The malfunction provision must provide that only if the State determines that each of these criteria are satisfied, no additional course of action could reasonably have been expected of the owner or operator. In such situations, the malfunction provision could provide that the State would not follow the initial notice of violation with any further enforcement action.

III. SOURCE DEMONSTRATION APPROACH--RACT LIMITATION NOT ADEQUATE TO ATTAIN AMBIENT STANDARDS

Section 172 requires that those nonattainment submittals for photochemical oxidants and carbon monoxide that will not be able to demonstrate attainment by December 31, 1982, must provide for implementation of all reasonably available control measures (RACT). In a recent Federal court decision (Marathon Oil Co. V. EPA, F.2d (9th Cir., November 21, 1977) [a decision on malfunction provisions in certain water pollution requirements]), the court distinguishes requirements that are technology based (e.g. nonattainment plans based on RACT rather than attainment of ambient standards) from requirements that are health based (e.g., SIP emission limitations for attainment of the ambient standards). The enforcement discretion approach could be approved in RACT SIPs if modified as set forth below. A State may choose, however, as part of the RACT submittal not to provide a malfunction provision (i.e., Section 116). An acceptable malfunction provision for periods of excess emissions could require a source exceeding applicable emission limitations to report the five categories of information set forth in II above. The source could be given the opportunity to demonstrate that the excess emissions resulted from unavoidable production problems. Until such information is evaluated by the State, issuance of a notice of violation (or some equivalent State mechanism) would not be required. An approvable malfunction provision should specify that if the source does not sustain its burden of proof to the State's satisfaction, the excess emissions are a SIP violation and appropriate enforcement proceedings will be initiated by the State. If the source is able to demonstrate that the malfunction was genuinely unavoidable, it will not constitute a violation of the emission limitation.

It should be understood that if over a period of time, application of either the enforcement discretion approach or the source demonstration approach does not significantly curtail malfunctions to the extent that they are the cause of ambient violations, the malfunction portion of the SIP will either have to be further revised by the State or EPA will have to disapprove the SIP.

IV. PHASING IN AND OUT OF EQUIPMENT, ROUTINE MAINTENANCE, BYPASS PROVISIONS, AND PRODUCTION PROCESS EXCESS EMISSIONS

Any activity or event which can be foreseen and avoided, or planned falls outside of the definition of sudden and unavoidable breakdown of equipment. For example, a sudden breakdown which could have been avoided by better maintenance procedures is not a malfunction. In such cases, the control agency must enforce violations of the emission limitation. Two such common events are phasing in and out of equipment, and routine maintenance.

Phasing in and out of process equipment is part of the normal operation of a source and should be accounted for in the design and implementation of the operating procedure for the process and control equipment. Accordingly, it is reasonable to expect that careful planning will eliminate violations of emission limitations during such periods. If excess emissions should occur during routine phasing in and out of such equipment, the excess emissions will not be considered as having resulted from a malfunction, unless the source can demonstrate that such emissions were actually caused by a sudden and unforeseeable breakdown in the equipment.

Routine maintenance is a predictable event, which can be scheduled at the discretion of the operator, and which can therefore be made to coincide with maintenance on production equipment, or other source shutdowns. Most sources have the ability to build and maintain inventory upon which the source can draw during periods of shutdown for routine maintenance. Consequently, no excess emissions may be allowed for periods of routine maintenance.

It is recognized that in certain circumstances, it is necessary to bypass control equipment to avoid endangering life or sustaining severe property damage. Such bypassing will not be considered a violation of a RACT SIP under the source demonstration approach if the source sustains its burden of proof in the excess emissions report, but will be considered a violation of the attainment SIP under the enforcement discretion approach.

In addition to malfunctions, it is recognized that excess emissions may occasionally occur during normal production processes, even when the control equipment is well designed, operated and maintained. If the source can demonstrate, in its required excess emissions report, that it was operating the plant according to the above malfunction criteria, and that it was scheduling operations to preclude fluctuations, but that the emission limitation was nevertheless violated for production reasons beyond the control of the source, the excess emissions will not be considered a violation of the RACT SIP under the source demonstration approach, but will be considered a violation of the attainment SIP under the enforcement discretion approach.

§XX.8050 *Circumvention.*

(a) *No owner or operator of a source of volatile organic compounds subject to these Regulations may build, erect, install, or use any article, machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable Regulation.*

(b) *Paragraph (a) of this section includes, but is not limited to, the use of gaseous diluents to achieve compliance and the piecemeal carrying out of an operation to avoid coverage by a Regulation that applies only to operations larger than a specified size.*

DISCUSSION

This section of the Regulations is designed to prevent circumvention of the intent of the Regulations. This section, as written, only addresses the concealment of a violation. There are other types of circumvention which may be addressed in this section. An example of this is reducing the rate of capture of VOC by a capture system.

§XX.8060 *Petition for Alternative Controls.*

(a) The owner or operator of any source of volatile organic compounds subject to these regulations may petition the Director to allow the use of alternative emission limits, operational and/or equipment controls for the reduction of volatile organic compound emissions. The petition must be submitted in writing to the Director before September 15, 1980, and must contain:

(1) the name and address of the company and the name and telephone number of a responsible company representative over whose signature the petition is submitted;

(2) a description of all operations conducted at the location to which the petition applies and the purpose the volatile organic compound emitting equipment serves within the operations;

(3) reference to the specific emission limits, operational and/or equipment controls for which alternative emission limits, operational and/or equipment controls are proposed;

(4) a detailed description of the proposed alternative emission limits, operational and/or equipment controls, the magnitude of volatile organic compound emission reduction which will be achieved, and the quantity and composition of volatile organic compounds which will be emitted if the alternative emission limits, operational and/or equipment controls are instituted;

(5) a schedule for the installation and/or institution of the alternative operational and/or equipment controls in conformance with the appropriate compliance schedule section;

(6) certification that emissions of all other air contaminants from the subject facility are in compliance with or under a schedule for compliance with all applicable local, state and federal laws and regulations; and,

(7) all additional information, requested by the Director, necessary to determine whether the VOC emission reduction achieved by the alternative controls is equivalent to the emission reduction achieved by the applicable regulations.

(b) The Director may approve a Petition for Alternative Control if:

(1) The petition is submitted in accordance with paragraph (a) of this section;

(2) *all other air contaminant emissions from the subject facility are in compliance with, or under a schedule for compliance as expeditiously as practicable with, all applicable local, state, and federal regulations;*

(3) *the petition demonstrates that the aggregate VOC emissions from the affected operations will in no case be greater through application of the alternative control plan than would be permitted through conformance with the applicable VOC emission reduction regulations;*

(4) *the petition contains a compliance schedule for achieving and maintaining a reduction of volatile organic compound emissions as expeditiously as practicable, but no later than the compliance date that would be required under the applicable VOC emission reduction regulation; and,*

(5) *a nuisance condition will not result from operation of the source as proposed in the Petition.*

(c) *No alternative control plan is effective until it is submitted to and approved by the Administrator of the United States Environmental Protection Agency as a revision of the State Implementation Plan pursuant to Section 110(a)(3)(A) of the Clean Air Act.*

DISCUSSION

This section of the general regulation allows the owner or operator of a source of VOC to meet emission limitations through the use of alternative emission limits, operational and/or equipment controls. This section addresses occasions when a specific facility desires to meet an alternate emission limitation which may be more cost-effective. This section can be used to reduce the economic impact on a specific facility without changing the aggregate emissions from the facility. Consequently this is the section that would allow the "bubble concept" to be applied. The "bubble concept" implies relatively more control, than would be required by the applicable regulation, on sources with a low marginal cost of control and less on sources with a high cost, thus achieving the same emission reduction for less cost. It is important to note that the aggregate of the facility's emissions must be no more than the aggregate of the emissions allowable by the applicable regulations. Care should be taken in applying this concept so that the enforceability of the regulations is not jeopardized.

The Flat Wood Paneling industry will have numerous process change and add-on control options available within the limits of the specific regulation. However, the economics of meeting the specific emission limitations is going to vary depending on the type, quantity and quality of the various products. Therefore, it would be economically advantageous to the industry to allow the bubble concept to be applied.

The Manufacture of the Synthesized Pharmaceutical Products Regulation §XX.9400 is likely to address numerous small sources and few large sources of VOC within any specific facility. This is a situation where it may be advantageous to allow more stringent controls on the larger sources and less stringent controls on the smaller sources than would be allowed by the specific regulation.

In the Graphics Arts industry, a plant may operate many printing machines each emitting varying amounts of VOC. The variation in emissions from each machine may make it difficult to quantify emissions. Before the bubble concept can be applied to the Graphic Arts industry, the person petitioning for alternative controls must be able to quantify the uncontrolled emissions, the emissions that would result if the required emission reductions are met and the emissions that would result if the proposed alternative controls were implemented. If these quantities can be determined the bubble concept may be applied to this industry.

Any state which desires to include a "Petition for Alternative Controls" type of regulation should be thoroughly familiar with EPA's Proposed Policy Statement on this subject which appeared in Volume 44, No. 13 of the Federal Register on January 18, 1979 (44 FR 3740). As set forth in that Proposed Policy Statement, both air quality and enforcement considerations are pertinent to the development of an Alternative Controls section of an SIP.

The air quality considerations are:

1. Air quality standards must be attained and maintained;

2. Emissions under the alternative must be quantifiable and trades among them must be at least even, both from mass emissions and air quality impact standpoints;

3. The trades must involve comparable pollutants (i.e., a VOC which has been determined to be hazardous can not be traded with other VOC).

It is important to note that any Alternative Controls regulation should place the burden of proving quantifiable and even trades on the facility proposing the trade.

The enforcement considerations are:

1. All proposed alternative emission control provisions must be submitted to EPA as alternatives or additions to the existing SIP, not as a replacement for it. This is to ensure that an enforceable SIP provision remains in effect, even if the alternative emission control provision is not approved or is unenforceable for any other reason.

2. Each emission point must have a specific emission limit and a test method that insures enforceability.

3. Noncomplying sources should not be allowed to submit alternative emission reduction proposals.

4. Final compliance must be achieved as expeditiously as possible and no later than the date that would be required under the applicable VOC emission reduction regulation.

5. There should be no delay of existing enforcement actions.

Finally, as of this writing, the statement at 44 FR 3740 is a Proposed Policy Statement and, as such, there may be changes. States are reminded that any alternative controls provisions they may propose should be compatible with final EPA policy on this subject.

It is important to note that enforcement consideration number (2) specifically excludes facility wide emission limitations or control alternatives which allow variable emission limits for a specific source. It is clear that, in order to be enforceable, an alternative control petition must provide measurable, permanently established emission limits for each source of VOC emissions that is affected by the petition.

§XX.8070 *Monitoring, Recordkeeping, Reporting.*

(a) Monitors shall be installed on all process and control equipment as required by the Director. The monitors shall include visual and audible alarms actuated when the monitored parameters exceed design specifications. The monitors shall be calibrated at intervals stated in the maintenance manual required under the Inspection, Maintenance and Operating Procedures §XX.8030.

(b) (1) A daily written record shall be kept of all monitored parameters, as required by the Director.

(2) Records shall be kept of all testing performed in conformance with the appropriate Testing and Monitoring Section.

(3) A written record shall be kept of every time a monitor alarm system is actuated. The record shall include the date, time, duration and cause of the alarm actuation.

(4) All records required by this section must be maintained in a legible, readily available condition for at least two (2) years after the date on which the record was made.

(c) (1) The owner or operator of a volatile organic compound emission source subject to these regulations shall submit to the Director, as a minimum, annual reports detailing the nature, specific sources, and total annual quantities of all volatile organic compound emissions. However, the Director may require more frequent reports where necessary to accomplish the purposes of these Regulations.

(2) Copies of all records and reports under this section shall immediately be made available to the Director, upon verbal or written request, at any reasonable time.

DISCUSSION

Control equipment monitors are essential to determine continuing compliance with regulatory requirements. Specific monitoring requirements are often included in construction and operating permits; however, it is left to the Director's discretion to choose the specific parameters to be monitored, when permit requirements are lacking.

The following monitoring devices should be considered by the Director for major sources:

(1) A device to determine breakthrough in carbon absorption equipment which is connected to both a direct readout meter and a device that initiates regeneration;

(2) A device to monitor exit gas temperature on incineration equipment;

(3) A device to measure condenser outlet gas temperature; and

(4) Devices to measure scrubbing liquid flow rate and the pressure drop of the gas stream across a scrubber.

Records are required for monitored parameters, emissions tests and alarm system actuations. The period should be sufficiently long to allow for averaging of emissions, if needed, and completion of any enforcement cases.

APPENDIX B

COMMENTS ON THE DRAFT FINAL REPORT

REFINERY LEAKS

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American Petroleum Institute
2101 L Street, Northwest
Washington, D.C. 20037
202-457-~~7000~~ 7084

July 19, 1979

Mr. Tom Williams
Control Programs Development
Division, MD-15
Environmental Protection Agency
Research Triangle Park
North Carolina 27711

Dear Mr. Williams:

This is in response to your June 25, 1979 request for comment on the sample regulations for Group II Control Technique Guidelines on Volatile Organic Coumpounds.

Enclosed are our technical comments on the draft which like CTG's, we understand to be guidance documents to the states as they formulate SIP implementation.

If there are questions on the comments please contact me.

Sincerely,

E P Crockett

Edward P. Crockett

EPC/fh

Enclosure

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An equal opportunity employer

Comments of the
AMERICAN PETROLEUM INSTITUTE
on
Sample RACT Regulations for the Control of Volatile Organic Compounds

A. GENERAL COMMENTS

1. A serious concern is the manner in which the sample regulations expand upon and alter the provisions of the Control Technique Guidelines (CTGs) published by EPA. The CTGs were generally based upon the best available data at the time of their promulgation. Industry input and review of drafts was sought. In the case of the refinery equipment leak CTG, the petroleum industry cooperated in the conduct of an extensive research effort in support of its development and participated in a number of meetings as well as a three day workshop. Yet these model rules then subvert those carefully worked technical provisions by editorially imposing more stringent requirements without justification, without explanation of their scientific or emperical basis and without assessment of their cost effectiveness. An example of such arbitrary treatment is the imposition of inspection schedules and record keeping requirements in excess of those contained in the CTGs. Other specific cases are noted throughout our detailed comments.

2. The designation of a technology as RACT must consider economic feasibility. Similarly, the implementation of RACT should consider economics in terms of demonstrating that the environmental benefits to be derived are commensurate with the costs and inflationary impact to be incurred. In this regard, you are referred to the cost information submitted with API

letters of May 12, 1978, and November 22, 1978, in response to the proposed CTGs on refinery equipment and external floating roof tanks.

3. An excessive amount of record keeping and reporting is stipulated in the sample regulation. Certainly, some degree of record keeping is an essential part of demonstrating compliance. In fact, the published CTGs contain realistic reporting requirements. Why are they ignored? The collection and reporting of unduly voluminous data does not serve directly to reduce emissions. On the contrary, it unnecessarily consumes the valuable time of engineers who might better devote their time to running a tight, efficient plant. Numerous suggestions are offered in the detailed comments to reduce the paperwork without compromising the needs of compliance.

4. Explicit compliance dates appear throughout the draft. These specific dates are out of place in a guidance document intended to be "illustrative in nature." In adhering to the basic SIP compliance date of December 1982, the states must be allowed to prepare their own schedules, taking into account local conditions.

B. SPECIFIC COMMENTS

PART I -- GENERAL DEFINITIONS

Source

Consistent with the court decision in Alabama Power et al. v. Costle, Nos. 78-1006 and Consolidated Cases (D.C. Circuit, June 18, 1979), this definition should conform to that in the Clean Air Act.

Vapor Control System

Delete the phrase "at least 90 percent by weight." It is inappropriate to include a specific control efficiency in a general definition.

Volatile Organic Compound and Organic Material

These definitions should be consistent with EPA's "Recommended Policy on Control of Volatile Organic Compounds (42 FR 35314 -- 316, 7/8/79), namely: "Volatile organic compound: (also denoted as VOC) means any compounds of carbon except carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, methane, ethane, 1,1,1-trichloroethane and trichloro-trifluoroethane."

Vapor pressure has no place in a general definition. Vapor pressure is applied in specific instances, e.g., floating roof tank guidelines, where low volatility stocks are exempted because control is not cost effective.

Malfunction

This term should be defined. It is used in various sections of the document.

PART II --

SECTION 9000 PETROLEUM REFINERY EQUIPMENT LEAKS

Section 9010(h)(2) -- Delete the phrase "flanges and other connections." The EPA-Radian refinery study found that flanges are a negligible source of leakage and are excluded from the CTG. "And other connections" is too vague a term to be included in a regulation.

Section 9020 -- The inclusion of pilot plants and facilities used for chemical or physical analyses goes beyond the CTG. The magnitude of these emissions should be estimated and the cost effectiveness determined before EPA suggests bringing fugitive emissions from research laboratory facilities under regulation.

Low volatility liquids should be excluded as in the case of floating roof tanks.

The exemption threshold should be 0.1 psia, not 0.011 psia.

Discussion -- paragraph 2 -- The EPA-Radian refinery study indicates that "heavy liquid service equipment" in petroleum refineries have a low propensity to leak. Therefore, a comment should be included to provide for change in future refinery guidelines to that effect.

Section 9030(a)(1) -- The operator is required to include a leaking component on a written list of scheduled repairs within 24 hours after the leak is found. As GCA noted, this goes beyond the CTG. It is an unnecessary requirement and will not serve to stimulate the operator's intention nor ability to repair the component in a timely manner. Recording of the component inspection date alone on the work order and the requirement to repair the leak within 15 days is sufficient to expedite work orders.

Section 9030(a)(2) -- Restate to conform to CTG wording, "... make every reasonable effort to repair the leak within fifteen (15) days."

Section 9030(b) -- Sample lines and bleeds between double block valves should be exempt or, as an alternative, exempt fittings on all lines one inch or smaller until a cost effectiveness analysis is performed to demonstrate the need for control.

Section 9030(c) -- As presently worded in the absolute, a refiner might have to cease an operation in order to remark a component the moment its identity became obscure. Reword to preclude such unreasonable enforcement by such phraseology as, "Pipeline valves and pressure relief valves in gaseous VOC service will be marked in some manner which is obvious to both. ..."

Discussion -- "repair" is misspelled in last sentence of the second paragraph.

Section 9040(a) -- Notification of purchase or ownership of VOC monitors is an unnecessary requirement. The operator should merely indicate on the report what instrument was used. The refiner may contract the work and not ever own an analyzer.

Section 9040(b) -- The requirement to submit a monitoring schedule goes beyond the CTG. Its benefit is questioned in view of the unreasonable burden it imposes. This might result in a listing of 10 to 20 thousand components in a refinery. At most, all that should be required is scheduling by unit.

Discussion -- Specific quarterly submission dates should not be stipulated. This type detail should be left to the refinery and local authority to work out to their mutual advantage. Some regulatory offices will be overwhelmed with paper if all submissions are due on the same date.

Section 9050 Discussion -- Spot checks of recently monitored components by regulatory personnel is proposed as a means of preventing "circumvention" of monitoring procedures. A leaking component so identified by an agency spot check is not proof of "circumvention." As both the EPA-Radian work and the API-Rockwell study clearly reveal, components may leak on an intermittent or variable basis.

Section 9060(a) -- As written, this section could be interpreted to require that records be maintained on every component in a refinery whether it leaks or not. This could amount to 40,000 records in a 100,000 barrel per day refinery. At most, records should be required only on those components found to exceed the action level.

Section 9060(b)(5) -- The language of the CTG should be incorporated for relief valve monitoring and repair. The CTG recognizes that relief valves are inaccessible to inspection with a portable instrument. The horn on a relief valve, which vents the material, usually extends well above an access platform, making it extremely unsafe to reach with an instrument probe. A visual inspection is sufficient to determine whether a relief valve has seated properly.

Explicit exemption should be made for inaccessible valves. Some valves on top of columns and vessels would require construction of special scaffolding to monitor.

Section 9060(d) -- The details of leaker marking should be left to the operator. For example, all information concerning leaks might be conveniently stored in a computer in which case only an identification number is needed on the tag.

Section 9060(e) -- The submission of a quarterly report of leakers not repaired is excessive. It is recommended that the records be maintained in the refinery and made available to inspectors on request.

Section 9060(f)(3) -- Requiring listing of the stream composition on the log components is unnecessary. One needs only the component identification number to locate it.

Section 9060(g) -- Requiring records to be kept for four years is arbitrary, excessive and serves no useful purpose. The object of record keeping is to demonstrate the current status of regular monitoring. Maintaining records for one year satisfies this objective adequately. An absolute maximum period would be the 2 year CTG provision.

Discussion -- Paragraph 2 -- The 1 minute monitoring estimate is low. An actual experience in a large refinery showed 1 to 1-1/2 minutes per on-plot valve and 2 to 10 minuts for each off-plot valve.

Section 9070(c) -- Essential components which would require process unit shut-down to repair should be automatically exempt from the 15 daqy repair and variance request requirements. They would be repaired during the next scheduled shut-down. The paper work associated with variance requests for every case is overburdensome for both operator and regulator.

Section 9070(e)(1) -- The term company officer should be replaced with "responsible company representative." The term as written could be construed to mean corporate officer. In a large company such officers are far removed from the details of day to day refinery operations.

SECTION 9700 PETROLEUM LIQUID STORAGE IN EXTERNAL FLOATING ROOF TANKS

Section 9710(b)(7) -- The definition of vapor mounted seal is confusing. Use the identical definition of the CTG.

Section 9710(b)(8) -- Waxy, heavy pour crude oil should be defined as, a "crude with a pour point of 30°F or higher or with a Reid Vapor Pressure (RVP) less than 2 psia." This is based on the fact that the analytical procedure for determining RVP (and ultimately true vapor pressure using API 2517, "Evaporative Loss From Floating-Roof Tanks") requires a sample transfer at 32-40°F.

If a crude does not pour at those temperatures, a valid RVP measurement cannot be obtained. If a crude RVP is less than 2 psia, a valid true vapor pressure could not be readily obtained from API 2517. In each of those cases, it would be impossible to accurately judge whether a crude should be controlled under the true vapor pressure requirements for these regulations.

Section 9730(a)(2)(iii) -- Delete the 1/2 inch gap requirement. No such provision appears in the CTG and no discussion or basis for this arbitrary limit is offered.

Section 9730(b)(1) -- The monthly inspection requirement is unnecessary, unreasonable and inconsistent with the CTG which indicates annual inspections. The basis stated in the Discussion section "... to be consistent with regulatory guidance for fixed roof tanks" is both erroneous and irrelevant. The CTG for fixed roof tanks specifies 6 months or shorter. Furthermore, fixed roof tank requiremetns in this regard bear no relationship to external floating roof tanks.

Section 9730(c) -- It is recommended that the record keeping threshold be changed to 1.5 psia. This would have the effect of excluding a fair number of tanks from the record keeping process but would make very little difference in the emissions recorded. For example, the difference in emissions from a 100 foot tank storing 1.0 psia stock and one storing a 1.5 psia stock is approximately 1 ton per year (assuming neither is equipped with a secondary seal).

Section 9730(d) -- Submission of annual reports is unnecessary. Records should be maintained by the operator and available upon request to inspectors. Furthermore, information on content amounts and physical properties is excessive. Gap criteria information is the critical requirement and is the only item which should be mandatorily recorded. Physical properties apparently refers only to vapor pressure and should be so stated if retained as an entry.

Section 9730(e) -- Requirement for maintaining records on file should not exceed the 2 years specified in the CTG.

Discussion -- paragraph 1 discusses "demand gap measurement for non-vapor mounted seals and more frequent gap measurements for vapor-mounted seals." Based on current test programs, these considerations are not consistent with potential emissions levels that might be found as a function of different seal types and gap configurations. The CTG should be followed explicitly until the new API Bulletin on evaporative loss from floating roof tanks is published in late 1979. Discussion of tank and seal effect on emission levels in the bulletin will permit proper technical assessment.

Delete item 3 (page I-8) regarding throughput. Floating roof tank throughput has an insignificant effect on emissions.

SECTION 9900 LEAKS FROM GASOLINE TANK TRUCKS AND VAPOR COLLECTION SYSTEMS

Section 9910 -- A definition of "submerged filling" is needed.

Section 9930(a) -- Simplify this confusing paragraph by rewording to the effect that, "no owner, operator or driver of a gasoline truck subject to the regulation shall allow the loading or unloading or other use or operation of such vessel unless it has a valid certification of vapor integrity and displays a sticker issued by the regulatory authority." The test criteria, frequency for testing and procedures for issuance of stickers should be described separately.

The intent of the present wording to hold owners of loading facilities responsible for policing transport vehicles is understood, but this is an inequitable assignment because a large number of loading facilities are "key-lock" types which are unmanned. The promulgation of this requirement would reduce productivity by requiring the "owner or operator" of the loading facility to provide personnel to double check the operation of the truck owner or operator who should properly be the responsible party.

Section 9930(a)(2) -- The three inch delay pressure in five minutes is arbitrary and unnecessary. Recent analytical work has shown that losses from tanks which have pressure changes of less than six inches of water during the pressure test have infinitessimally small leaks during transit.* It is recommended that a six inch water pressure delay be incorporated. It will have no measurable effect on emissions. The vacuum requirement should be retained.

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* "Setting a 95 percent Vapor Recovery Standard" R.A. Nichols Engineering, 519 Iris Avenue, Corona del Mar, California 92625.

Section 9930(b) -- This section is unnecessarily verbose and should be restated as, "The vapor collection system shall operate within the specified pressure limits and shall not have vapor leaks greater than the specified readings above background or liquid leaks."

Section 9930(b)(1)(i) -- This section should be deleted. Pressure in the truck per se should not be considered in this regulation as atmospheric emissions are the true concern and compliance can be amply determined with other methods.

Section 9930(b)(1)(ii) -- The use of an explosimeter should not be used as the only criteria for determining leakage. Preliminary results of tests done by Western Oil and Gas Association (WOGA) indicate that the explosimeter is strictly a leak/no leak device. Implicit in the tank truck pressure delay test is the premise that a certain amount of leakage from tanks is allowable. The use of the explosimeter effectively precludes any leakage during product transfer at the loading rack.

It is recommended that a tiered test system be employed to determine if there is leakage during loading. The modified test procedure would work as follows:

(1) During truck loading, check the collection system with the explosimeter -- if there are no leaks as defined in

(b)(1)(ii) the truck passes. If the truck fails the explosimeter test, a leakrate test of the system should be performed.

(2) The leakrate test is accomplished by blocking the vapor return line returning to the vapor processor. The tank is pressurized with bottled nitrogen to a nominal loading pressure (approximately 6 to 8 inches of water) and the leakrate measured with a rotometer. The allowable leakrate would be based on the size of leak allowed by the tank pressure test in (i) which is approximately one percent.

The leakrate test has several advantages. It allows a small amount of leakage during loading which is less than that allowed by the pressure test. It takes into account the size of the tank being filled. Smaller tanks are allowed less leakage than larger ones. Small leaks which are difficult to fix but have no significant air pollution impact can be evaluated and allowed to remain if they are within the guidelines. WOGA will soon issue a report on this method.

Section 9930(b)(2) -- It is assumed that the reference to "subparagraph (c)(1)(ii)" should be "(b)(1)(ii)."

Section 9940 -- Delete specific dates. See paragraph 4, General Comments. Schedules should be specified in terms of months following promulgation of the regulation.

Section 9950(a) -- The owner or operator of a "source" can only be responsible for his side of the vapor recovery system. He may refuse to load vehicles which are out of compliance, but he cannot be responsible for the integrity of the inspection procedure.

Change the last sentence to read, "All tests shall be made in tank truck maintenance shops."

Section 9950(b) -- The requirement to notify "the Director in writing" at least 30 days before a certification test (presumably of a tank truck) is scheduled, with the provision that the Director may reschedule the test is unjustifiably arbitrary. One or two days notice should suffice.

Section 9960(a) -- Maintaining records for 4 years serves no useful purpose. Two years should be the absolute maximum requirement.

Section 9960(c)(1) -- Change "company officer" to "company representative." The responsible supervisor should be the one to sign the certificate, not a far removed corporate executive.

Discussion -- The suggestion that a summary of recent testing and monitoring information be kept with the truck would only increase the paperwork to administer the program to an unreasonable extent.

PART III --

SECTION 800 GENERAL PROVISIONS

This section appears to be unnecessary. In places it is too brief or generalized. Some of its provisions may overlap specific equipment and procedure regulations. Breakdown and malfunction provisions usually found in existing SIPs are adequate. Most require only notification and from that point on the local authorities have several options to include the imposition of penalties.

Section 8020(a) -- The 1.5 gallon/day limitation seems to be not only arbitrary and extreme but is impossible to apply without further explanation or rationale. What is the basis of this number? Does "person" have a special meaning in this case? By the definition at page H-2, "person" means "firm, company, corporation." The 1.5 gallon/day on a cumulative basis is unreasonable for an entire large refinery, to say nothing of a large corporation with numerous refineries.

The term "disposal" should be defined.

Gulf Oil Company - U.S.

ENVIRONMENTAL AFFAIRS

D. P. Martin
MANAGER
T. J. Beacham
DIRECTOR
W. T. Wells
DIRECTOR
R. C. Lieber
ADVISOR

P. O. Box 2001
Houston, TX 77001

July 20, 1979

Mr. Tom Williams
Control Programs Development Division, MD-15
Environmental Protection Agency
Research Triangle Park, NC 27711

Dear Mr. Williams:

Re: REVIEW OF A GUIDANCE DOCUMENT FOR THE GROUP II CONTROL TECHNIQUE GUIDELINES FOR VOLATILE ORGANIC COMPOUNDS

We have reviewed the document sections pertaining to volatile organic compound leaks from petroleum refinery equipment as requested in your June 1979 letter to all interested parties. It is our understanding that EPA will submit the guidance document to the states for their use in revising State Implementation Plans (SIP) to meet the requirements of the Clean Air Act Amendments of 1977. Our comments are as follows:

First of all, it is our opinion that the detail and time consuming requirements of the document guidelines with respect to refinery equipment leaks is counterproductive to "improving government regulations" in accordance with Executive Order 12044. The President's purpose was to streamline regulations and eliminate unnecessary red tape and paper shuffling.

We believe it is unwise to divert technically trained personnel from the task of energy product production to engage in a mandated effort of monitoring for leaks with all the necessary preparation, calibration, recordkeeping, filing, retrieval, report writing, etc. This type of activity is routinely provided for in normal everyday operations without the associated burdensome reporting to government agencies and approvals, certifications, and review by a third party not involved with the production of energy products for the consuming public.

Gulf

N OF GULF OIL CORPORATION

2 HOUSTON CENTER
909 FANNIN STREET

A monitoring schedule with all its associated requirements will require a substantial number of man-hours. The results obtained by the use of the proposed procedures and approved equipment are questionable at best. Maintenance of leaking hydrocarbon equipment is normally performed without the oversight of an outside agency because of safety considerations and conservation of valuable hydrocarbon material. It is just good business to conserve energy by operating refinery processes and equipment in an efficient manner.

In connection with "Petitions for Alternative Controls," there is not any reasonable justification to require the approval of a control agency whose personnel are most likely to be less knowledgeable in petroleum refinery operations than persons experienced in the manufacture of petroleum products who currently make such decisions on a routine basis. It is admitted in the discussion that the potential amount of paperwork is great. All this unnecessary involvement by the EPA will add to the cost and further retard the efficient production and supply of petroleum products.

Various time periods will be required to repair leaks, depending on the urgency with respect to safety, fire hazard or loss of material, availability of parts, etc. Fifteen days could be short in some cases. The allowable repair period should be extended to 60 days to allow greater flexibility in repair scheduling and sufficient time to obtain necessary parts. Most routine type leaks would not require that much time for repairs. However, a minor leak could occur in some cases and be subject to the regulations, which would require facility shutdowns that would impact adversely on energy product supply and substantially increase emissions of volatile organic compounds.

It is noted that the time frame between the effective date of the regulations and the due date for the first monitoring report is eight months. This is probably unrealistic when considering the quantity of monitoring equipment required by the industry, preparation of schedules, providing for inaccessible components, etc. A minimum time period of twelve months would be more appropriate.

Very truly yours,

D.P. Martin

D. P. Martin

WTW:lb

Shell Oil Company

One Shell Plaza
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Houston, Texas 77210

July 18, 1979

Mr. Tom Williams
Control Programs Development Division
MD-15
U. S. Environmental Protection Agency
Research Triangle Park, NC 27711

Dear Mr. Williams:

This is in response to your request for review of the draft guidance document prepared to assist the States in preparation of RACT regulations for the Group II CTG's.

Before offering comment on the specifics of the sections sent us for review, we must strongly voice our objection to the preparation and distribution of this document under the guise of a "guideline" which is "not to be construed as rulemaking by EPA." We have, in the past, expressed our concern to the EPA that the CTG's themselves and the instructions to the states have in effect set regulations which must be followed if a state is to have an approvable SIP. All of this has occurred without proper rulemaking procedures and, as such, violates the Administrative Procedures Act. This particular "guidance" document carries this illegal type of rulemaking even further by essentially dictating the exact wording a state must adopt in its rules in order to have an approvable SIP.

We do not believe that this document is proper EPA action. If the agency indeed adheres to the position that the states are free to adopt any set of regulations which accomplish the same purpose as the CTG's would, there should be no reason to issue this document.

We, therefore, recommend that this proposed "guidance" document be withdrawn - or in the alternate that it be subject to the proper rulemaking procedures as required by the APA.

In regard to the specific sections of the proposed document, we offer the following:

GENERAL DEFINITIONS

"Breakdown": We do not believe that it is necessary to include possible causes in order to define "breakdown." The definition should read:

A failure of an emission control device or emission monitoring equipment to function as designed.

We note that there is no proposed definition for "malfunction" even though that term is used in several "regulations." We do not believe that such a definition is necessary; however, if the EPA intends to make a distinction between "breakdown" and "malfunction" then a separate definition should be included.

"Control Device": The proposed definition does not include equipment that prevents the creation of an air pollutant. A floating roof on a storage tank is an example of this type of equipment. The agency has, in the past, always considered floating roofs to be control devices.

"Facility" and "Source": The definitions proposed here are not consistent with those used in other EPA areas - such as PSD. They are also not consistent with the recent court decision on the PSD challenge.

"Volatile Organic Compound": This definition is overly restrictive and serves no purpose other than to unduly complicate regulatory efforts. Furthermore, it is not consistent with the definitions used in most SIP's nor that used by EPA in its SIP regulations. This definition should be left to the discretion of each state.

PETROLEUM REFINERY EQUIPMENT LEAKS (xx.9000)

xx.9010

(b)(1) The definition proposed for "petroleum refinery" is not consistent with that used in the NSPS. This will cause confusion in state plans.

(b)(2) It is not known what is meant by the last sentence in this definition.

A definition should be provided for "pipeline valve". We suggest that it be defined to exclude sample valves, bleed valves and bypass valves.

xx.9020

We do not believe that pilot plants or facilities used for analysis should be covered by this regulation. These facilities were not included in the CTG document nor were they studied by Radian in the supporting studies. There has been no estimate of the leaks from this equipment nor the cost effectiveness of these control.

xx.9030

(a) (1) A specific written list of scheduled repairs is not necessary. The rule should be flexible enough to allow sources to integrate their leak maintenance program with their already established other maintenance programs. Job tickets are one example of a method of "listing" leaks.

(a) (2) No recognition is made for the leak which cannot be repaired within the 15 day period. The CTG recognized that in some cases this would occur or that their repair would cause even greater emissions than those which would occur if the leak were allowed to continue until the next scheduled shutdown. This situation must be provided for in any regulation.

xx.9040, xx.9050, xx.9060

The regulations offered in these sections provide for only one method of leak detection and monitoring. There are other acceptable methods available, many of which have been approved by the EPA under NESHAPS. We object to offering only one option to the states when others may be more effective for a particular situation. No provision is made to allow approval of an alternate plan.

xx.9040

Each state should be permitted to set its own compliance plan and schedule.

xx.9050

Each state should be permitted to determine its own method of testing compliance.

xx.9060

Again, each state must be allowed to determine its own method of recordkeeping and reporting.

xx.9070

This entire action should be deleted. Each state should set its own alternative procedures and methods for providing variances.

PETROLEUM LIQUID STORAGE IN EXTERNAL FLOATING ROOF TANKS (xx.9700)

xx.9710

As discussed, it is necessary to exempt "waxy, heavy pour crude oil" from this regulation because of the tank wall and wax deposition problem. In our experience, we believe that crude oils with a cloud point more than 15°F above ambient and a pour point at ambient or above will cause a significant wax buildup which will lead to failure of the tank seal or roof.

xx.9720

The temperature at which the true vapor pressure should be determined is not defined. Usually this is specified to be actual storage conditions.

xx.9730

Subpart (b) (1) requires monthly inspections to insure compliance with subpart (a). This would include some type of inspection which includes measurement of seal gaps. As indicated in Subpart (b) (2), this measurement is intended to be made only annually. Therefore, subpart (b) (1) should read:

> "perform routine inspections once per month in order to insure compliance with part (a) of this section [except part (a) (2) (iii)]

Subpart (b) (3) is an unnecessary requirement.

A person who has met the remaining requirements has fulfilled the intent of the regulation. A record of throughput or types of liquids has no bearing on compliance.

Subpart (c) is also an unnecessary regulation. The reasons that a storage vessel may not be subject to the regulation could be any of those listed in xx.9720. The vessel could be too small; contain crude oil prior to custody transfer; contain waxy, heavy pour crude oil; or be exempt because of the type of construction. If this is the case, the records of vapor pressure, temperature, type and throughput serve no useful purpose.

In Subpart (d), the submittal of records should be left to the discretion of the State agency.

xx.9740

This section of the regulation suddenly switches to the term "volatile organic compounds" instead of "petroleum liquid". It would appear that confusion will result unless consistency is maintained.

Furthermore, the entire compliance section should be deleted. Each State should determine its own schedule based on input from the industry involved at any public hearings.

GENERAL PROVISIONS

This entire set of regulations should be deleted. We are not aware of any CTG which has been issued which covers the issues addressed here. As discussed above, we feel that the issuance of detailed regulations, based on CTG's without formal rulemaking procedures is improper. In this case, there have not even been CTG's prepared on which these regulations could be based.

Many of the provisions in these regulations are no more than harassment techniques and serve no purpose in reducing air pollution. The record-keeping, training manual and operator qualification sections are totally unjustified. Such requirements will lead to highly increased operational costs with no realization of benefit.

The agency has cited at least two references as the basis for its draft regulations covering Breakdown, Malfunction and Operation Changes (xx.8040) which are clearly improper. The so-called "Workshop" guidelines and a proposed policy statement published in the "Federal Register" are hardly valid justification for the requirement that states adopt the proposed or model regulations.

Very truly yours,

Amick for

L. P. Haxby, Manager
Environmental Regulatory Analysis

JAM:hg

Union Oil Company of California

Union Oil Center, Box 7600, Los Angeles, California 90051
Telephone (213) 486-7538

ES79-402

union 76

E. D. Blum
Coordinator Environmental Programs

July 19, 1979

Mr. Tom Williams, Project Officer
Control Programs Development
Division, MD-15
U.S. Environmental Protection
Agency
Research Triangle Park,
North Carolina 27711

Dear Mr. Williams:

We appreciate the opportunity to comment on the draft suggested RACT regulations for control of volatile organic compounds that will eventually appear as EPA guidance to the states. We received a request for review and comments on Sections A, B, and L direct from you. Union Oil also received a copy of Section K via the American Petroleum Institute.

This letter contains our comments on all four sections. For ease of reference, the comments appear in the order of the draft document.

Definition of Volatile Organic Compound (p. A-4)

We strongly urge that both methane and ethane be added to the list of compounds that are excluded from the definition of volatile organic compounds (VOC) for the following reasons:

-- Methane and ethane are generally recognized as having very low or negligible photochemical reactivity. In fact, EPA's "Recommended Policy on Control of Volatile Organic Compounds" that appears as Appendix B in EPA document EPA-450/2-77-008 (OAQPS No. 1.2-073) dated May, 1977, specifically states that methane and ethane should be exempt from regulation under state implementation plans (SIPs).

-- Many states are already adopting regulations for control of VOCs as a part of their SIP review process. Many of these regulations exclude methane and ethane from the definition of volatile organic compounds. Failure to exclude these compounds in the suggested regulations can only lead to confusion and unnecessary regulatory revisions. Past experience tells us that the states have a tendency to accept EPA "guidance" as a mandate rather than the suggested guidance intended by EPA.

-- If EPA intends that methane and ethane are to be included as VOCs, it follows that all pipelines that carry natural gas should be subjected to fugitive emission regulations. This would impose what would appear to be an intolerable burden on the natural gas supply and distribution industry considering the literally millions of valves that would have to be monitored.

Section XX.9030(a)(2) (p. B-4)

This section requires repair and retesting of leaking components within 15 days. It does not specifically address the problem of the leaking component that cannot be successfully repaired while the equipment is operating. This problem is covered in Section XX.9070(c) which allows the owner or operator to petition for a variance until the next shutdown. We suggest that Section XX.9070(c) be referenced in Section XX.9030(a)(2).

Section XX.9060(b)(2) (p. B-9)

This section requires that all pipeline valves in gaseous service be monitored quarterly. Consistent with the earlier comment that methane and ethane be excluded from the definition of VOC, we urge that valves in lines that handle only methane and ethane be excluded from this requirement.

We also feel that pipeline valves in inaccessible locations that are normally either open or closed (i.e. block valves) should be excluded from the quarterly monitoring requirement provided that the valve is not found to leak during the initial inspection.

Section XX.9060(e)(1) (p. B-10)

It is unreasonable to expect anyone to submit a report of monitoring activities on the first day of the new quarter. We suggest that reports be required no earlier than the 15th of

January, etc.

In any event, requiring a report in September is not consistent with reports in January, April, and July. We suspect this is an oversight and that October is what was intended.

Section XX.9910 - Definitions (p. K-2)

§XX.9910(b)(7) "Vapor Collection System"

This definition is inconsistent with the definition of vapor collection systems on page A-4 of Part I. Also, the term "direct displacement by the gasoline being transferred to force vapors ..." may be confusing to someone not practiced in the art and furthermore may not even be appropriate in some collection systems. We suggest that both definitions be rewritten as follows:

"Vapor Collection System": A vapor transport system which directs vapors from the vessel being loaded into either the vessel being unloaded or a vapor control system.

§XX.9910(b)(8) "Vapor Control System" (p. K-3)

This definition is consistent with the definition on page A-4 of Part I. We believe that it is not appropriate to include the control efficiency of a vapor control system in these definitions. Control efficiencies are more appropriate in the body of the regulations. This would allow specification of different control efficiencies for different types of installations, for example. We suggest that the definitions be rewritten as follows:

"Vapor Control System": A system that controls the release to the atmosphere of volatile organic compounds in the vapors displaced from a vessel during transfer of gasoline.

Section XX.9930(b)(1)(ii) (pp. K-5-6)

This section requires that leak testing be done by the method referenced in the CTG EPA-450/2-78-051. We believe that equivalent leak test methods should be permitted and suggest that the following be added at the end of the section: "or an equivalent procedure approved by the Director."

Section XX.9950(b) (p. K-10)

Section XX.9950(a) requires that the owner or operator demonstrate compliance at his expense. Section (b) as written would allow the Director to postpone or reschedule a compliance to suit his convenience. It is clearly the responsibility of the owner/operator to schedule compliance tests. The Director can request that tests be rescheduled; he should not reschedule them on his own.

Section XX.9950(c) (p. K-10)

The last sentence is more appropriately a part of the test procedure and should be deleted from this section.

Section XX.9950 - Discussion (p. K-11)

The first paragraph again refers to the Director scheduling compliance tests. We believe that test dates must be by mutual agreement of the involved parties as equipment must be taken out of service to perform the test. We again emphasize that it is not appropriate for the Director to schedule tests.

If you have any questions, I will be happy to try and answer them.

Sincerely,

E.D. Blum /njr

E. D. Blum

EDB:njr

cc: Mr. Dick Southard: API

MISCELLANEOUS METAL

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DEERE & COMPANY

JOHN DEERE ROAD, MOLINE, ILLINOIS 61265 U.S.A.

Safety & Environment

9 July 1979

Mr. Tom Williams
Control Programs and Development Division, MD-15
U. S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

Dear Mr. Williams:

Deere & Company Comments
Guidance Document for Group II
Control Technique Guidelines
for Volatile Organic Compounds (VOC)

We appreciate the opportunity to review the guidance document being prepared to assist state and local agencies in preparing Reasonable Available Control Technology (RACT) regulations. Our comments are as follows:

1. Page C-7, § XX.9130(c)(3):

   "Equivalent means of VOC removal" could include combustion processes other than incineration. It should be possible to approve an alternative combustion process such as sending the VOC exhaust through an existing furnace or other burner at efficiencies less than 90%. This would not eliminate alternatives that would reduce VOC emissions by capturing some of the energy available in the compounds. Such schemes might meet the 3.5 lb./gal. criteria while destroying less than 90% of the VOC. These options should not be limited by the 90% efficiency requirement applied to incinerators.

2. Page C-9, § XX.9140:

   The development of alternate compliance schedules by major sources will not be an infrequent occurrence. The guideline should point out that there will be many legitimate requests for alternative compliance schedules. There are several reasons for this. First, most large sources will use a combination of low solvent coatings, process equipment changes, and add-on control devices so that neither schedule presented

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in the guideline would be applicable. Second, in most cases, changing to a flow solvent content coating requires more than just changing paints. For example, most existing systems require additional washing facilities and forced-air ovens before the conversion to waterborne coatings can be made. Planning and engineering these changes in addition to switching to low solvent coatings will take additional time. Third, in many cases, it may be more economical to replace existing systems with new processes that require significant modifications to other manufacturing areas along with the surface coating area. Fourth, OSHA and energy conservation considerations will expand the scope of most changes made in coating systems. This too will extend the time required for planning and engineering.

In summary, the compliance schedules in the guideline are too short for most of our major systems. The states must be aware of the additional planning required for major coating system changes and must be willing to provide the additional planning and engineering time. For major sources the two-year compliance schedule does not allow sufficient time to achieve compliance.

3. Page C-17, § XX.9160(c):

If the alternative control plan has emissions no greater than those permitted by complying with the VOC emission limitations, approval by the Administrator of U. S. EPA is unnecessary since that level of emissions has already been considered in the SIP.

4. Page L-5, § XX.8030(a):

Operation and maintenance manuals for large coating lines can be extremely large documents. We do not believe any state agency has either the resources or manpower to properly review operation and maintenance manuals as proposed. We believe that the submittal should be made at the discretion of the director on a case-by-case basis to avoid unnecessary paperwork.

Please call me (309/752-5152) if you have questions or need additional information.

Yours truly,

Michael E McGuire

Michael E. McGuire
Environmental Control

/dk

c: R. D. Grotelueschen
C. R. Neff

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON, DELAWARE 19898

June 21, 1979

Mr. Tom Williams, Project Officer
Control Programs Development Division MD-15
Environmental Protection Agency
Research Triangle Park, NC 27711

Dear Mr. Williams:

REVIEW OF GUIDANCE DOCUMENT (SAMPLE REGULATION) FOR SURFACE COATING OF MISCELLANEOUS METAL PARTS AND PRODUCTS (DRAFT FOR COMMENT)

As requested, we have attached our comments regarding the subject draft guidance document.

Our comments are as objective as possible, taking into account the objectives of EPA, available and projected coating technology and the resources of the users of these coatings.

We consider this sample regulation extremely important to industry with considerable impact on coatings users. If we can be of any service to your staff in finalizing the document, we would be pleased to have our people visit your offices to discuss problem areas.

Very truly yours,

John E. Lowe
Environmental Coordinator
Finishes Division

JEL/bjr
Attach.

DU PONT COMPANY COMMENTS REGARDING GUIDANCE DOCUMENT (SAMPLE REGULATION) FOR SURFACE COATING OF MISCELLANEOUS METAL PARTS AND PRODUCTS

Pg. Ref.
C-2 8
C-3 Dis.

We suggest that the regulation allow considerable leeway in considering metallic coatings as "clear coats". In many instances such metallics are transparent and use the undercoat as a reflectant base or undertone color. Technology does not exist to appreciably increase the solids and lower VOC emissions.

C-4 (a)7
C-5 (b)9

Regarding SIC Major Group 37 - Heavy Truck Listing

The number of vehicles that constitute a significant source should read 35 vehicles per day average.

The heavy truck manufacturers represent a unique surface coating problem vs. the proposed regulation.

Heavy truck coatings can be characterized as follows:

1. Require coatings quality to withstand exterior exposure - user expectation equal to passenger automotive.

2. Custom color requirements, i.e.; all units coated require almost unlimited color selection which means that the coating system must utilize the automotive refinish product lines that are available, or which may be custom mixed on site, in approximately 12,000 colors.

3. Units are coated with tires and bearings mounted which limits the coatings to low bake products.

There is no coating technology in existance that will satisfy the above requirements and comply with the proposed regulation. No complying technology is expected until the 1987-1988 time frame. Active research is underway

C-4 A-7
C-5 B-8
C-5 Dis.

Regarding Automotive Refinishing

The sample regulation recommends that "this regulation is not applicable to surface coating of the following metal parts and products" - (B-8) "Automobile Refinishing".

Then under the Discussion section on C-5, the reasons for exempting automobile refinishing are documented.

Pg. Ref.

The discussion section then advises that the states may want to extend the regulation to include automobile refinishing.

We strongly request that the portion of the discussion section that would allow regulation of the automotive refinishes be eliminated.

There is absolutely no technology in existance that can lower VOC emissions from this sub-industry regardless of the size of the shop. They require: (1) literally thousands of colors that only exist in present product lines; (2) the durability, aesthetic appearance and color match must be exacting.

We recommend that the discussion reference to both automobile refinishing and heavy trucks be eliminated.

C-7 (a) 1. There is now no air dry (3.5 lbs./gal.) technology that will meet the needs of the Casket Industry. Suggest Item (a) 1 which allows 4.3 lbs./gal. be reworded to say "...that applies coatings which are clear or which require more than 1.5 mils DFT for hiding".

2. The term "forced air dryers" implies use of ambient air. The rule should be written to say simply "forced dried" or "forced warm air dried".

C-7 (d) In one of the C-7 (c) (3) cases where "higher" solids paint is used in combination with oven incineration, the capture efficiency can be less than 80 percent and still yield a better than 80 percent emission reduction for the whole system.

C-7 (d) In those cases where incineration is to be used to reduce emissions as well as other process changes, it should be explicitly stated that the incineration unit may capture any part of the emission stream.

C-8 Dis. Suggest that control be simply that solvent washings and purgings be directed into essentially closed containers.

C-13 C-2 We agree and support the "certification by the manufacturer of the composition of the coating" so long as the certification is limited to total VOC solvent content. Composition of the coating or specific solvent composition would represent divulging proprietary and confidential formula data.

Pg.	Ref.	
C-13	(d)4	We suggest rewording to assure this requirement would not be used to require exotic devices of high cost and/or low value.
C-14	Dis.	We are opposed to the conversion of organic carbon as a measurement of VOC - for the following reasons: 1. The method has not been validated - very little data. 2. The method is cumbersome, i.e.; a full one day test - one sample. 3. Expensive equipment required. 4. Some portions of the method involve questionable ASTM tests. 5. Would require a complete change of nomenclature and testing by the coatings industry without just cause.
C-15	Dis.	Average rate of coating useage can most practically be determined by a review of the user (source) records of consumption.
L-12	(b)	We consider the 15 #/day exemption for small industry extremely stringent vs. the relatively small emission pollution involved. We recommend: Urban Areas - 200 #/day Rural Areas - 100 tons/year
L-4	(a)	A disposal limit of 1.5 gal./day is too inflexible for all coating operations. The limitation should be related to the size of the source and the type of coating involved. Example; Electrodeposition tanks where, under specific operating situations, as much as 10% of the solvent can go to waste on the Ultra Filtration Unit.
L-7	(e)	Emissions beyond the control of the source should not constitute a violation, i.e.; start-up, shutdown, breakdown or malfunction of properly designed equipment.

Pg. Ref.

L-16 Dis. Reference; D. G. Hawkins' 7/3/78 response to
L-17 Att. R. L. Duprey 5/18/78 correspondence.

There is a distinct implication that RACT limits may be made more stringent. This position by the agency can only produce a "let's wait and see" strategy by sources who must commit capital investment into control equipment or process changes involving higher cost. There must be assurances to sources that investment on their part to attain compliance will not become outdated due to limit requirement changes affecting existing sources.

General Comment

While this document encompasses the Miscellaneous category of sources, we feel strongly that the guideline should be as specific as possible toward consistent application of the regulation for like sub-industries both within a state and from state to state.

FREIGHTLINER

FREIGHTLINER CORPORATION
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503 283 8000

June 21, 1979

Tom Williams
Control Programs Development Division, MD-15
Environmental Protection Agency
Research Triangle Park, North Carolina 27711

SUBJECT: Review of a Guidance Document for Group II CTG's for VOC's

Dear Mr. Williams:

We submit herewith Freightliner Corporation's comments and attachments concerning the sample regulation on the development of a guidance document for volatile organic compounds in the surface coating of miscellaneous metal parts and products, Group II.

We would be pleased to supply any additional information which may be helpful to assist in data gathering or explain Freightliner Corporation's operations.

Very truly yours,

FREIGHTLINER CORPORATION

Gary C. Strealy

Gary C. Strealy
Finish System Engineer

GCS:js
Encls.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PROPOSED GUIDANCE DOCUMENT FOR GROUP II, CTG'S FOR VOC'S

Freightliner Corporation
Portland, Oregon

June 21, 1979

Freightliner Corporation is a manufacturer of custom built Class 8 diesel trucks. Our truck manufacturing plants located in Portland, Oregon; Chino, California; Indianapolis, Indiana; and Mt. Holly, North Carolina perform customized truck painting as a part of the manufacturing process.

We generally sell our trucks to the owner/operator who operates his own business as an independent contractor. He is extremely proud of his vehicle, places very high aesthetic value on its appearance, and expects the paint finish to withstand exterior exposure in all types of weather and road condition usage

When placing their orders, owners regularly specify very intricate paint designs with five and up to eight colors, or they can choose from current designs. Freightliner takes pride in offering very intricate paint design schemes on our fully customized trucks. Attached is our latest paint design brochure showing some of the newest paint schemes available. Currently we have available approximately 151 different paint designs.

The coating materials used by Freightliner are acrylic enamel, both air dry and bake, and air dry polyurethane enamel. These coating materials provide good color match characteristics, and achieve specific extreme performance characteristics, such as hardness; mar resistance; high gloss and color retention levels; film flexibility; crack, chemical and gasoline resistance. Freightliner's ability to provide coatings which meet customer requirements is crucial to compete in the heavy duty truck market.

We custom mix our paints on-site in each truck plant using color formulas provided by our paint supplier. This allows us flexibility in scheduling and provides an almost unlimited color selection necessary for our requirements of a fully customized operation.

Any proposed standards which would restrict our capability to mix paints at truck plant sites would impede Freightliner's ability to meet customer demand for a broad range of colors and designs. Our paint supplier indicates that it cannot provide an on-site coatings system with low VOC emissions which could meet the proposed standards.

The EPA guidelines recognize this dilemma and exempt custom coatings operations with a production of fewer than twenty units per day. However, most custom painting operations in the heavy duty truck manufacturing industry have a capacity to produce thirty to thirty-five trucks per day. Thus we believe that a more realistic level for exclusion from the proposed guidelines would be somewhat above present custom production levels of approximately thirty-five trucks per day.

Environmental Activities Staff
General Motors Corporation
General Motors Technical Center
Warren, Michigan 48090

July 5, 1979

Mr. T. Williams, Project Officer
Control Programs Development Division
MD-15
U. S. EPA
Research Triangle Park, N.C. 27711

Dear Mr. Williams:

General Motors submits these comments relative to the sample regulations for implementing the CTG for surface coating of miscellaneous metal parts and products.

A survey is being made within the Corporation to identify the number and kinds of coating used in operations that would fall under this type of regulation. We expect to submit additional comments within the month, based upon results of this survey.

One area that needs clarification is the status of assembled products or sub-assemblies that contain non-metallic substances incapable of withstanding the curing temperatures associated with coatings that meet the suggested VOC content limits. For instance, products that contain plastic, paper, fabric, wood, or sealing and fastening agents may not be resistant to temperatures needed to cure high solids or waterborne coatings.

The portion of the regulations that defines and discusses applicability should clearly state how such products are to be treated. If they were not meant to be covered, XX-9120(b) should so state. If they were, a warning that the emission limits may not be applicable and that alternative limits based upon coating materials that can safely be used should be added.

The clarification is particularly important to motor vehicle manufacturers and their suppliers, as non-metallic materials play increasingly larger roles in programs to reduce weight and improve fuel economy.

I trust that these comments will assist the EPA in its goal to develop regulations with maximum cost-effectiveness and minimal burden to affected industry. Please give them careful consideration. Should you have any questions, please call Mr. Doug Frank of my staff at 313/575-8609.

Sincerely yours,

W. R. Johnson

W. R. Johnson, Director
Plant Environment

WRJ:mb

RANSBURG

When You Say ELECTROSTATIC You Mean RANSBURG

A DIVISION OF RANSBURG CORPORATION

June 25, 1979

Mr. James Berry, Director
Chemical Applications Section
Mail Drop 13
U.S. EPA
Research Triangle Park, NC 27711

Dear Mr. Berry:

Recently, in correspondence with state air pollution agencies, as well as affected customers, a concern has arisen pertaining to the Control Techniques Guidelines for control of VOC emissions from surface coating. The guidelines, as you know, set forth emission limitations in a format of mass of VOC per volume of coating as delivered to the applicator.

Some categories of coating, (can, coil, paper, fabric, vinyl, and magnet wire) employ applicators such as roll, gravure, knife or die. For these categories and their corresponding applications techniques, this format is appropriate. The amount of VOC emitted from the operation is in direct proportion to the amount of VOC present in a volume of coating for a given production rate. However, the other categories, auto and light duty truck, metal furniture and large appliances, typically employ atomizing or spray application techniques. For these categories the limitation specified in terms of mass of VOC per volume of coating does not relate well to actual emissions of the operation. This is because not all of the coating delivered to the applicator ends up on the part. Coating ends up in water wash, walls, floor and exhaust. This amount will vary, depending on the equipment used, but whatever is not on the part still emits VOC to the atmosphere. Practically speaking, industry is only concerned with coating a part to a certain thickness (build). If a person's equipment is only capable of putting 40% of the paint from the applicator on the part, (a transfer efficiency of 40%) he will spray until that 40% gives him the desired build. If this person coats large appliances, for instance, and uses a coating with 2.8 lbs. per gallon, he will be in compliance. If he were to replace his equipment with automatic electrostatic equipment, he would find that better than 90% of the coating could be applied to the part. Although he is still in compliance, he has reduced his actual VOC emissions by over 50%.

In the CTG for Large Appliances, Volume V, the section on Monitoring Techniques and Enforcement Aspects states that if a facility "... converts from a manual conventional spray application (at a transfer efficiency of 40-70%), to an automated electrostatic spray system (at a transfer efficiency of 70-90%)... a reduction in VOC will be realized." Further, it says, "this reduction in VOC can be considered in any evaluation of the overall reduction achieved by the operator." Unfortunately, we do not know what transfer efficiency the author had in mind when formulating the 2.8 lbs. per gallon coating, so it is impossible to quantify. In Volume VI, the CTG on Miscellaneous Metal Finishing, in the same section, similar language is found

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except it now reads, "... should be considered in any evaluation...". We agree and have attempted to consider it but, again, we do not know what transfer efficiency is assumed with the limitations. Finally, in a justification of changing the limitations for auto and light duty truck NSPS to a lbs. VOC/gallon applied solids format, we find the following: "When add-on controls or high solids coatings are used to comply, transfer efficiency must be taken into account to determine equivalency to water base coatings." In this document, the format stated as pounds VOC/gallon applied solids was developed with a specific transfer efficiency in mind, and calculations of equivalency are easily carried out. Obviously it is of greatest importance to determine what transfer efficiency is assumed with limitations in terms of mass VOC per volume coating to determine equivalency.

Many states have adopted VOC limitations for auto and light duty truck surface coating specifying a minimum transfer efficiency assuming (based on the CTG) that a waterborne coating would be used and applied with conventional equipment at about a 40% transfer efficiency We feel this is reasonable but we need your corroboration.

I contacted RTP recently to ascertain a transfer efficiency for the large appliance limitation. In a telephone conversation on June 19 with Bill Johnson of your staff, Bill suggested that since electrostatic methods are the industry norm, a transfer efficiency of 65% would be appropriate. Again, we feel this is an acceptable representation of the industry, but we need a written confirmation of this figure.

The metal furniture limitation applies to a more diverse spectrum of industry and is more difficult to assess. Dennis Crumpler told me that he would try to develop a presumptive figure for this category. We would be happy to offer any necessary assistance to determine a value at an early date.

Finally, in miscellaneous metal finishing where we were urged to consider transfer efficiency improvements, we unfortunately have no facility for doing so without such knowledge of the presumptive efficiency used to arrive at the limitation.

I would greatly appreciate hearing from you at your earliest convenience, as I am sure it will eliminate a majority of the confusion surrounding the CTG's. Further, many states have hesitated incorporating their own transfer efficiency estimations in the event that your determinations will be different. In order to promote a uniform application of the CAA Amendments, and avoid confusion and unnecessary problems, we hope you will be able to provide us with guidance.

Sincerely yours,

Robert M. Acker
Director, Environmental Affairs

RMA:mjb

cc: D. Caffee
E. Drum

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

8 AUG 1979

Mr. Robert Acker
Ransburg Electrostatic Equipment
3939 West 56th Street
Indianapolis, Indiana 46254

Dear Bob:

Thank you for your letter of June 25, which discussed the need to establish "baseline" tranfer efficiencies for surface coating industries in order for a company to receive credit towards compliance with State regulations by improving transfer efficiency. I recognize that your firm has a vested interest in highlighting the environmental benefits of good transfer efficiency achievable by automatic electrostatic atomization and spray equipment. We are enthusiastic about electrostatic applications because the environmental benefits are derived directly from the reduced paint consumption by the coater.

In the letter you asked us to: (1) corroborate the 40 percent baseline transfer efficiency for water-borne coatings applied to auto and light duty trucks that some States have already adopted; (2) confirm the 65 percent baseline transfer efficiency in the large appliance industry which was discussed in a previous telephone conversation with Bill Johnson and; (3) establish "baseline" efficiencies for the industries which coat metal furniture and miscellaneous parts and products. First, let me point out that we did not consider transfer efficiency initially in writing the CTG's because of the absence of generally accepted measurement methods. We presumed that each manufacturer, as a normal course, would use an efficient application technique to minimize his material cost. As we learned more about the "real world" the States were at first given the opportunity and later urged to include transfer efficiency in their consideration. Correspondingly, we have learned more about which industries lend themselves to transfer efficiency considerations and to what extent.

Autos and Light Duty Trucks

The latest data we have indicate the application efficiency of non-electrostatic water-borne coatings is only 30 percent. I have enclosed two memos which provide more detail.

Large Appliances

The 65 percent baseline transfer efficiency given by Bill Johnson is in the right ballpark. His estimate was based on the fact that practically all the manufacturers use equipment at least as efficient as electrostatic spray guns. Recent information provided by the contractor responsible for developing a NSPS for coating large appliances leads us to accept 60 percent as a better "average."

Metal Furniture, Miscellaneous Metal Parts and Products

The 60 percent baseline for large appliances could be determined because the industry as you know, consists of a limited number of manufacturers who coat a limited number of end products. These products tend to be "boxy" with large, flat areas to be coated, a favorable condition for electrostatic applications.

The metal furniture industry and even more so, the miscellaneous metal parts and products industries are not so easily categorized. Thousands of firms coat as many products which range from small parts that are flow or dip coated (for which conversion to automatic spray might even increase emissions) to large machinery that often is air-sprayed. Second there is great uncertainty in even estimating the efficiency of a single application method when it is used to coat substrate configurations as diverse as found in the metal furniture and miscellaneous metal parts and product industries. Based on these problems we could do a disservice to many were we to attempt to establish a single presumptive norm for the transfer efficiency for all companies involved in these two extremely diverse categories.

It seems that the only prudent way to deal with these problems is to leave some discretion to the investigator charged with developing a limitation for a specific plant or process. Certainly we can give some general guidance. For example, we would expect flow and dip coating to average about 90 percent regardless of the shape of the substrate. Handheld air spray could be expected to average between 40 and 50 percent, handheld electrostatic about 60 percent, automatic electrostatic about 75 and high speed discs and bells from 85 to 90 percent.

This timidity on our part need not stymie Ransburg's attempts to exploit the higher average transfer efficiencies typical of electrostatic coating. Rather, I would suggest that the ratio of transfer efficiencies given above be used to develop the relative improvement in emission rate over an existing system. The State (with our help if necessary) need only identify the most common application system in use by a specific subset of the miscellaneous metal parts and products or metal furniture industries and compensate for an improved transfer efficiency with the appropriate ratio.

We welcome any further comments or suggestions you have concerning these matters or any data which may improve estimates of reasonable transfer efficiencies for given equipment and process situations.

Sincerely yours,

Dennis W. Crumpler

Dennis Crumpler
Chemical Application Section
Chemicals and Petroleum Branch

RANSBURG
ELECTROSTATIC
EQUIPMENT
A DIVISION OF RANSBURG CORPORATION

When You Say ELECTROSTATIC . . You Mean RANSBURG

August 28, 1979

Mr. John Calcagni
Physical Scientist
Control Programs Operations Branch
Mail Drop 15
U.S. EPA
Research Triangle Park
North Carolina 27711

Dear John:

Since meeting with you on the 22nd I have been trying to come up with the best approach to recognize transfer efficiency improvements. After trying to develop a case by case basis review procedure, I have the following comments to make.

First of all, we recognize that the entire issue of emission limitation on surface coating is a result of the solvent evaporating from the coating. It has been established that photochemical oxidants, and ozone in particular, are formed in the troposphere by reactions which start with hydrocarbons. Reducing the amount of solvent allowed to escape to the atmosphere reduces the amount of ozone formed, and thus the public health is protected. It is obvious therefore that the EPA is ultimately concerned with how much solvent is actually emitted from a particular coating operation.

Industry is engaged in producing necessary goods for society. They are interested in coating materials for their goods which provide corrosion resistance, durability, hiding, and perhaps most difficult of all, aesthetic appeal. The solvent in coating materials used by industry is only a means to transfer solids, which provide the desired characteristics, to the part. The cost for a given volume of coating is for the most part the cost of the solids. The solvent portion of the material is about ten or fifteen times less expensive than the solids. It remains, however, a necessary ingredient to deposit a uniform thickness of coating on a substrate.

In spite of the general impression of adversity, the interests of EPA and industry are really the same. Industry does not want to buy solvent and then see it go up the stack, and neither does EPA. In this regard, powder coatings, two component systems and others that have no solvent content are highly desirable coatings from both perspectives. However, for a variety of reasons, these may not be able to satisfy the performance characteristics of a particular user. It is therefore only realistic to assume that a certain amount of solvent is necessary to convey solids to a production piece.

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Because solvent is necessary to coat items, and because it needs to be limited, it is axiomatic that emission limitations should specify the minimum amount of solvent necessary to achieve the desired film characteristics. The amount of solvent used (and ultimately emitted) to achieve the desired characteristics depends on four variables:

1) Solids Content (or VOC Content) of Coating

2) Transfer Efficiency (coating applied/coating sprayed)

3) Film Build (thickness)

4) Area Coated

If three of these variables are held constant and one varied, the following relationships exist:

Solids Content	Transfer Efficiency	Film Build	Area Coated	VOC Emissions
Increase	Constant	Constant	Constant	Decrease
Constant	Increase	Constant	Constant	Decrease
Constant	Constant	Decrease	Constant	Decrease
Constant	Constant	Constant	Decrease	Decrease

The interrelationships of these variables can be exppressed by the following equation:

Solids Content x Transfer Efficiency   Film Build x Area Coated

Using these relationships, the ideal emission limitation should reflect the highest percentage solids coating material available, applied at the highest transfer efficiency achievable with the least film build acceptable and the least amount of area coated. Of the four variables, the one which historically has not been limited and probably should not be limited is the area coated. This would effectively limit the rate of production which is neither

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desirable nor necessary. Put simply, how much someone coats is up to them, but they must coat in the most effective (least VOC emissions) manner available.

The present format of mass VOC emitted per volume of coating delivered to the applicator only specifies one of the variables. This of course is not sufficient to limit emissions. A format of minimum transfer efficiency is not acceptable for the same reason, nor maximum film build.

The main difficulty with the mass VOC per gallon delivered format is that actual reductions in VOC emissions gained by improving transfer efficiency or reducing film build are ignored. Although t.e. has every bit as much an effect on VOC emissions as solids content, a source wishing to employ t.e. improvements must submit an involved petition and be granted an alternative limitation on a case-by-case basis. Further, as you point out, the state must submit this alternative limit as a SIP revision. This is obviously inequitable and in fact arbitrary. It is analogous to specifying a minimum transfer efficiency and forcing sources to petition for the use of higher solids or specifying a maximum film build and ignoring both t.e. and solids content.

The solution to the problem John is to change the format to an equivalent combination of the independent variables. Either a mass of VOC emitted per volume of applied solids (as per the auto and light duty truck NSPS draft), or mass emitted per area coated at a specific film build, would be ideal. This would be far easier to enforce, solves the problem of t.e. measurement, and accounts for the recoating of rejects. Instead of recommending that states allow case by case t.e. improvements, I think it would serve everyone's interest to recommend that the states change the format. For example, in large Appliance coating, instead of 2.8 lbs per gallon as delivered to the applicator, at a not well known t.e. of 60%, change to 7.5 lbs per gallon of applied solids, or else 4.7 lbs per 1000 ft^2 coated at a 1 mil build. Both of these limitations are identical to the one presented in the CTG, but more importantly they are clear concise limits that eliminate the extensive time, effort, and money associated with a case by case review. Additionally, they make enforcement a great deal easier, as plant records can be used and cleanup solvent as well as reject coating is accounted for.

All that is necessary to determine compliance with these formats is the following items:

1) Volume of coating used

2) Percent solids (or VOC)

3) Volume of solvent used

4) Number of parts coated

5) Surface area of parts

6) Film Build

The solids content, as we discussed, could be certified by the coating supplier. The purchase orders or daily production records could be used to John determine volume of coating and solvent used, as well as number of parts coated. The surface area of parts would need to be determined only once. Film build can be measured directly on the parts or, since this is a very closely controlled quantity, from the plant personnel. I have enclosed a form which we use on a routine basis in our lab for calculating "paint mileage", which is simply how many square feet a gallon of a given coating will cover at a 1 mil thickness. Alternatively, this could be converted to gallons of applied solids by appropriate conversion factors.

I think that this approach is attractive for several reasons. First, it would be one method that would accurately account for t.e. and film build, effectively limiting actual VOC emisssions for a given production level. This is most important from an air quality planning point of view. Secondly, it accounts for cleanup, recoat of rejects, and other sources of fugitive emissions. Lastly, enforcement does not rely on one variable, paint solids, to determine compliance. Compliance is determined just as easily, but in a manner which reduces the possibility of circumvention. I would appreciate hearing from you regarding this approach at an early date, as I think it has special merit.

Sincerely yours,

Robert M. Acker, Director
Environmental Affairs

cjc

cc: John Rasnic
Bob Marshall
DSSE
Jim Berry
Dennis Crumpler
Bill Johnson
OAQPS
Don Johnston
RTI

RANSBURG LABORATORY TESTS
Paint Mileage

FOR____________________________ DATE____________________________

EQUIPMENT____________________________

Test Number						
Part Name or Number	Calculator Use					
Hanger Number						
Rotate-Index-St-Thru						
Work Height						
Paint Number						
Rotated-Indexed Dia.						
CC/Gal.	Ent.	3785	3785	3785	3785	3785
Total Delivery*	÷					
Conv. Speed (fpm)	X					
Hanger Centers (ft.)	÷					
Parts per Hanger	X					
Parts Cut Gal.	=					
Parts Paint + Thinner	X					
Parts Paint	÷					
Parts Uncut Gal.	=					
Sq.Ft. per Part	X					
Sq.Ft. Uncut Gal.	=					
Average Film (mils)	X					
Sq.Ft.Uncut Gal @ 1 mil	=					

FORMULAS:

$$\frac{3785}{\text{cc/min.}} \times \frac{\text{FPM}}{\text{Cen. in Ft.}} \times \text{Parts/Hanger} = \text{Part/Cut Gal.}$$

$$\text{Part/Cut Gal.} \times \frac{\text{Paint + Thinner}}{\text{Paint}} = \text{Parts/Uncut Gal.}$$

Form No. SL 6906-2

VEGETABLE OIL

CROWN

CROWN IRON WORKS COMPANY

1229 TYLER STREET N. E.
P. O. BOX 1364
MINNEAPOLIS, MINN. 55440
U. S. A.
PHONE (612) 781-3101

July 13, 1979

U.S. Environmental Protection Agency
Office of Air Quality Planning & Standards
P.O. Box 12194
Research Triangle Park, North Carolina 27709
Attn: Tom Williams

Dear Mr. Williams:

Thank you for the draft copy of the proposed Guidance Document for Group II Control Technique Guideline for Volatile Organic Compounds (VOC).

Our company's interest in them is as a manufacturer of solvent extraction systems for Vegetable Oil Mills. The solvent commonly used is hexane. We appreciate the opportunity to comment prior to distribution of a finalized document. Crown Iron Works Company works very closely with the Vegetable Oil Mill Industry and does feel an interest in regulations pertaining to them.

In all honesty, we believe the proposed regulations are difficult to understand, unnecessarily complex and a likely source of technical and legal controversy. First of all, the classification of hexane as a VOC of medium photochemical activity in the atmosphere can be disputed as it has not been proven. Secondly, the proposed method of determining residual solvent in meal is fairly repeatable, but is of unknown accuracy, disagreeing with a similar previously accepted method by as much as 66 times! Thirdly, the regulations are not geared to overall performance but rather to unnecessary and impractical restrictions on emissions at every moment including short breakdowns. Fourthly, economic impact to the community, state and the U.S. are not considered. The cost of complying and maintaining records, the complexity of regulations and issuance of permits, possible court litigations, means companies will be very hesitant to make capital investment in increased capacity equipment. Companies will find it easier and cheaper to build plants overseas. This will deprive our nation of tax producing revenue.

To expound a bit on the four (4) reasons for objecting, let me go over them point by point. Hexane has not to my knowledge been proven to be a compound photochemically active. It was originally classified as non-active and was re-classified only on the assumption it is active.

The second point is that there are two methods for determining hexane content in the meal. We do not have EPA-450/2-78-041. By EPA's admission, however, this does not define sampling procedures. This is still to be determined by future tests in the field. The other reference (WAN) describes an improved analytical method.

While this does allow better repeatability, it is of unknown accuracy. It is highly subject to variation under field test conditions, and as noted, it differs dramatically in results (up to 66 times) compared to a previously accepted method. How can regulations be written when testing is not yet accurate or defined?

Thirdly, the guidelines are geared to monitor and regulate short duration problems and not more meaningful overall performance. Hexane is non-toxic, of moderate environmental impact, and the effect of momentary fluctuations in a small emission are totally meaningless. Furthermore, regulations should be for overall performance over fairly long periods not for limited breakdowns. The regulations proposed require the Oil Mill to notify the National Director within one (1) hour of a shutdown causing any increase in emission. The burden of proof then is on the processor to show it was an unavoidable breakdown. Furthermore, Vegetable Oil Mills run 24 hours per day, 7 days per week, 330 days per year and the National Director will have a staff on duty the same operating hours as Oil Mills (holidays and nights), just sitting and waiting for calls; rather absurd.

Fourthly, economic impact to community, state and country can be great. Must we continue to see a program of non-growth in this country. Because of high costs of complying with U.S. regulations or worse, not being able to get permits, plants will be built outside the country. For instance, the State of California is producing more cottonseed than it has capacity to process. State EPA regulations however, prohibit expansion of processing capacity. A California Oil Mill has been working for a year to receive a permit for a new plant and has not received one yet. This refusal of permit is despite the fact a new plant would use better available technology than is used in existing facilities. Solvent loss would be much less in new plants than in old ones. Also, excess cottonseed produced by American farmers must be sold at reduced prices for processing overseas or must be sold for feed without removal of oil. The old worn out facilities continue to operate at over capacity often with higher emissions than would be true with a new plant. The community and state lose on dollars to the farmer, unemployment and tax revenue.

I thank you for the opportunity to voice my opinion. Unless simplified regulations are rewritten based on overall performance, I believe they can only lead to court litigations, reduced capital investment and significant and unnecessary increase in non-productive costs.

A letter is enclosed from our Chief Engineer also regarding these regulations. His comments are very interesting, I believe.

Respectfully yours,

Glenn D. Brueske
Sales Mgr. - Process Div.

cc: Senator Boschwitz
Senator Durenberger
Congressman Frenzel

GDB/jo

CROWN

CROWN IRON WORKS COMPANY

1229 TYLER STREET N. E.
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July 13, 1979

The Honorable Dave Durenberger
Senator from Minnesota
Washington, D.C.

Dear Sir:

Recently the EPA sent us a draft of proposed regulations for emission of hexane (a volatile organic compound or VOC) from the several hundred domestic plants which process our soybeans, cottonseed, corn germ, etc. Our company does not operate these oilseed extraction plants. We do, however, design and manufacture the solvent extraction and solvent recovery systems used in these plants. We thought long and hard before writing in response to this draft in complete openness because we do not wish to become needlessly entangled in a possible controversy between our customers who do operate these plants and the EPA. In the final analysis we could not, in good conscience, remain silent.

Our Mr. Brueske has written a letter to the EPA and a copy is enclosed. I would like to add a few personal observations and encourage you to read the other letter as well.

In my opinion, this draft of a proposed EPA regulation reflects an approach to controlling emissions which is much more complex than necessary and will result in serious technical and legal enforcement problems. The result may be disruption of domestic production, the dispiriting of domestic processors, very little net gain in air quality and further erosion of business and public esteem for the EPA and government in general. I feel that the vitality of our farming and food economy is at stake -- most of the larger grain companies and countless farmer-owned cooperative processors would be weakened in world competition or would increasingly move operations overseas. Probably our company would benefit in the short term because we build equipment which may be required, but in the longer view, rules which needlessly harm our customers or undermine our productive system may not help our business for long, and cannot help our nation.

The technique used in developing the regulations or the laws which demand them may lead automatically to the problems I will note. I have followed the process at a distance for a few years, and seen many EPA consultants and managers with no previous knowledge of the industry begin to develop an understanding and then become submerged under a new layer of people; under the best circumstances a comprehensive understanding is not easily developed and even those most closely involved at EPA have never run a plant or in many cases are not even enabled to visit one until quite late in the game!

Consequently those involved must fall back upon their legal expertise or experience as consultants oriented towards somewhat complex environmental testing -- and this seems to have biased the result away from practical plant concerns and towards legal-technical complication.

Major concern #1: The proposal is written in specialized terms, abbreviations, and is legally complex; I have extreme difficulty in understanding what it really says. For example, the last paragraph on page L-13 leaves me unsure if there is any way to be safe from violation under the variety of "approaches" available. I am reminded of the Business Week article in which a Kennecott smelter spent $280 million for EPA mandated controls, only to be told 'oops, you need to spend twice that again'. With the confusing format of this proposal and the possible overlap of other regulations, the processor is left in continual discomfort.

Major concern #2: The proposal lacks a legitimate incentive to cooperate. It seems that "enforcement-language" standards (EPA or other) tend largely to make confused and frightened plant managers conversant with their lawyers and discouraged at being alluded to as law-violators for their failure to meet somewhat obscure or controversial goals. Economic pressures and resulting stock-holder questions, however, speak a language the manager knows and directly responds to without translation, delay, intimidation or social degradation. The EPA should encourage incentives within the managers language and area of capability, not the lawyers. This attempt to adopt the language and understand the interests of those governed would seem appropriate in all forms of government.

Major concern #3: The controls are on specific points of emission from the system and require expensive equipment and testing. Further, the methods are in question as to accuracy and reliability of equipment. As an example of an uncertain technique likely to generate disagreement and turmoil, note the EPA reference (c)-(2), page D-11, Wan, P.J.: in Table II of the reference, the two methods cited (both showing good "reproduceability" but unknown accuracy) for determining solvent content in cottonseed meal disagree (under laboratory conditions) by as little as 1.37 times and as much as 66.33 times! The newer method is apparently preferred over the previously accepted method - but can one imagine the countless court confrontations over disputed data?

Also, note that an optional emission control device mentioned by EPA is the carbon bed absorber. These are not advisable for use in hexane plants; they were used years ago, and all removed due to inherent hazards of explosion. The uses noted would also involve much wasted energy.

Major concern #4: Even if practical and understood, I do not suspect that the regulation would be as effective in the real goals of reducing pollution as far simpler methods might be. The specific limits defined for each point of emission, (a necessary area of controversy) have to be set at practical levels, taking into account the variables of different plants, and when summed, it may well be that the total allowable emission could be higher than is desirable; an equal possibility is that a very low emission plant might fail in one specific test or have a minor malfunction and be in "violation", probably shut down. Note also that such specific regulations eliminate a flexible response to the total emission problem. This complexity and possible disfunction could be avoided.

Please note that the solvent in question, hexane, is not (to my knowledge) toxic. It is of interest to the EPA only for the fairly long-term average emission as a volatile organic compound which is assumed to increase photochemical "smog", and it is of interest in the short term only because it makes one"drunk" (or could smother a person if over-exposed) and is highly flammable. The operators, managers, and insurance regulations direct their efforts towards the short-term safety issues, and the EPA is only legitimately concerned about the longer-term averages. So why does the EPA concentrate on continual recording of specific point emissions, immediate mandated telephone admission of failures, 4 years of detailed records, etc.? In a serious problem a manager would do better to remember calling the fire department! This is not plutoneum, it is hexane.

May I very tentatively suggest (for other, better ideas could perhaps be devised if industry were seriously consulted) that point emissions or "tail end monitoring" be dropped in favor of the relative simplicity of plant inventory reporting, "head end monitoring" of total monthly solvent lost per ton of raw oilseed processed? I must assume that the ultimate intent is to see that all plants run fairly low emissions levels, which requires fairly efficient operation, and with efficient operation the loss to atmosphere is a fairly constant and high proportion of total losses. Probably it is also true that under inefficient conditions a similar high proportion would be lost to atmosphere. It would be necessary that specific, reasonable limits on gallons of solvent lost per ton of meal produced be tabulated for each oilseed, type of system, weather condition, or whatever -- and the solvent purchases of each plant be compared and graphed for trends. Then, I highly recommend that the incentive be economic and reasonable, (to avoid resentment and justified legal challenge) on a basis of how many excess gallons were needed. It may even be practical to reduce or eliminate penalties for high emission plants when they can show specified improvement trends or active plans. The main point, however, is the comparative simplicity of generating the data needed for a highly accurate view of the situation. The technical-legal testing hassle and operational interference are eliminated, the spot-inspection threat is less worrisome (ever have the mother-in-law drop in on your wife just as she burned the bacon?), and the economic trend can be predicted and improved more happily and cooperatively.

May I risk mentioning a possible further simplification? The increasing cost, allocations, and possible shortages of hexane already have the more aware operators moving rapidly to reduce its loss. Somewhat uniquely, the EPA and managers herein find a common economic incentive! Further, these plants are nowhere near to the largest emitters of volatile organic compounds. Further still, the level of photochemical activity of hexane has admittedly not been demonstrated. Would a somewhat informal, statistical and educational program suffice? Few managers will continue to spend $135,000 more annually (for a medium size plant) on solvent than their average competitors once they (or plant owners...) find they needlessly use 50% more solvent than the average. That sum may seem small in government, but it is a large share of annual profit!

Certainly objections may exist to some aspects of the above ideas, but it is doubtful they could compare to what I feel are unfortunate aspects of the EPA draft proposal. I write in an attempt to find a means, someplace in our complex society, for government and business to cooperate in respect, in knowledge of and accomodation for strengths, weaknesses, and problems of the other party. Excessive reliance on the legal adversary approach to an improved American life style is a blind alley as we all will find as we increasingly become the object of regimentation from afar, and find shortages of production close to home.

Thank you.

Yours very truly

George Anderson
Chief Engineer - Process Div.

cc: Senator Boschwitz
EPA

GA/jo

NATIONAL COTTONSEED PRODUCTS ASSOCIATION, INC.
Established 1897
SUITE 528
2400 POPLAR AVE
MEMPHIS, TENN.
38112
MAIL ADDRESS
P. O. BOX 12023

July 19, 1979

Mr. Tom Williams
Control Programs Development Division
MD-15
Environmental Protection Agency
Research Triangle Park, NC 27111

Dear Mr. Williams:

The National Cottonseed Products Association, Inc. is the trade association of the cottonseed processing industry. There are 76 out of a total of 81 operating oil mills in the United States which are members of this Association. Forty (40) operating mills have solvent extraction plants so the total volume of volatile organic compounds emissions from this industry are a small percentage of the total.

To our knowledge, there has been no economic impact study conducted by EPA directed toward a regulation on volatile organic compounds nor has there been one conducted by this industry. However, it is reasonable to assume that there will be increased production costs as well as increased power requirements with no increase in production efficiency. It can be reasonably estimated that monitoring and record keeping costs might well exceed $25,000 per year and some mill operators calculate costs up to $50,000 per year. This is a significant item for the average cottonseed oil mill with a 200-225 ton capacity processing 40,000 tons of seed per year.

While there are some fundamental differences in the processing of soybeans and cottonseed, there are areas in common. In respect to carbon adsorption and incineration systems I would refer you to comments made by the National Soybean Processors Association in which we concur, as follows:

> "The proposed RACT controls of carbon adsorption and incineration on the post-DT vents will add significant fire and explosion hazards to the extraction process. NSPA members have worked for years with professional and technical associations and with the National Fire Protection Association to develop and institute plant design features and operating practices which will enhance plant safety. The extraction process for oil seeds has special safety problems (not present in, for example, a petroleum refinery) because of the requirement

> to introduce, and later remove, large volumes of solids (prepared soybeans) into and from process vessels containing a flammable and explosive solvent. If required to be added to the present process, carbon adsorption or incineration would greatly increase the risk of fires or explosions in the plant and would likely result in loss of life or property in some cases. In the process of carbon adsorption, heat is generated when the solvent vapor adsorbs on the carbon. A plant upset in the main process could momentarily send a high concentration of solvent vapors into the adsorbers, resulting in a possible fire or explosion inside the adsorber which could then propagate backwards into the main process.
>
> With regard to incineration, you should be aware that incineration of post-DT vents is not allowed by the National Fire Protection Association due to the special hazards involved. Even ducting these vapors to a point 100 feet from the extraction building does not sufficiently reduce the hazard. Additionally, as the report points out, the incineration process is also economically unsound and energy inefficient."

The cottonseed processing industry has also worked closely with the National Fire Protection Association and its representatives assisted in the development of NFPA36.

In addition, mineral oil scrubbers now in operation may not be as efficient in controlling emissions as required by the proposed regulation.

This industry does not now know of equivalent means of VOC removal that guarantees 95% reduction by weight.

There are many problems associated with this regulation that are not addressed by the EPA Guidance Document. For example, energy is of critical importance in the cottonseed products industry. Virtually all regulations to date promulgated by EPA, OSHA, _et al_., called for increased energy usage without a corresponding increase in productivity. Inflationary costs are also a part of these new regulations and they too should be considered before additional burdens are heaped on industry and the consumer.

These are but two, which to be sure are out of the realm of pure technology, but should be taken into consideration.

Very truly yours,

Kenneth O. Lewis

Kenneth O. Lewis
Executive Vice-President

KOL:mw

NSPA
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PROCESSORS
ASSOCIATION

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89-7452

August 10, 1979

Mr. Tom Williams
Project Officer
Control Programs Development Division
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Research Triangle Park, N.C. 27711

RE: REVIEW OF A GUIDANCE DOCUMENT FOR GROUP II CONTROL TECHNIQUE GUIDELINES FOR VOLATILE ORGANIC COMPOUNDS

Dear Mr. Williams:

We are in receipt of your undated memorandum on the above subject which asks for comments on your "sample regulations" prescribing RACT for vegetable oil plants. We would initially like to note that your office did not provide copies of your memorandum and its attachment to NSPA nor any of its member companies in a timely fashion. We learned of the existence of the document indirectly, and were finally provided copies only after a specific request. In discussions with your office we were given permission to file our comments on or before August 10, 1979.

According to your memorandum, the document attached thereto is intended as "... a guidance document to assist State and local agencies in preparing RACT regulations..." We vigorously object to your including vegetable oil plants in this document for the simple and obvious reason that State and local agencies have been asked not to prepare RACT regulations for the vegetable oil industry at this time. As stated in Walter Barber's memo of June 22, 1979 (copy attached):

> "Initial results from the first of several scheduled field tests indicate that the measured results are significantly more variable than originally anticipated. Accordingly, I have concluded that it would be prudent to defer regulatory action for vegetable oil plants until after the test program is completed this fall and all the data have been analyzed.
>
> States should not be required to adopt rules for this CTG category during 1979. Further information will be provided on this matter after the completion of the field test program."

JOHN G. REED, JR
Chairman

C. LOCKWOOD MARINE
Vice Chairman

SHELDON J. HAUCK
President

A.E. IDLEMAN
Secretary

EDWARD J. CORDES
Treasurer

50
FIFTIETH
ANNIVERSARY
YEAR

HALF CENTURY OF
WORLD LEADERSHIP

Don Goodwin was even more precise in his letter of June 29, 1979 to the State of Ohio (copy attached):

> "... we are requesting that regulatory action for vegetable oil plants be deferred until the data from this test program have been analyzed,"

Messrs. Barber and Goodwin are saying, in effect, that the data base underlying the CTG has been called into question. Additional data is presently in the process of being collected, and it is certainly possible, if not likely, that the CTG will have to be modified. In view of this fact, and in view of the fact that States will not be proceeding with regulatory action on vegetable oil plants at this time, it would be needlessly confusing, if not irresponsible, to include vegetable oil plants in a guidance document intended for current State regulatory action.

Although we strongly believe that the guidance document should not include vegetable oil plants, we have agreed to provide you with preliminary comments. You should bear in mind, however, that the results of the current test program will likely necessitate a fresh look at this situation.

After publication of the CTG, NSPA sent comments thereon to each potentially affected State (each of these comments had previously been discussed with personnel from your Chemical and Petroleum Branch). Since the "guidance document" currently under consideration is based on the CTG, we have attached for your present consideration a copy of our letter to the affected States. The following paragraphs contain additional comments.

Section XX.9230 (page D-6) requires "at least a 95% removal of VOC by weight". We believe that 95% removal far exceeds "reasonably available control technology", and in fact is at the upper limit of the capabilities of any removal system. We feel that a 90% VOC removal requirement would be more appropriate.

As presently written, the sample regulation does not require post DT control equipment if the solvent content of the meal leaving the DT does not exceed 1350 ppm. We would like you to clarify that individual plants may achieve the 1350 ppm threshold utilizing any appropriate method, including but not limited to process modifications.

On page D-7 the statement is made that "the air flows to be controlled are usually small". We would like to point out that the air flows involved, especially in the dryer and cooler, are anything but small. We would expect air flows of approximately 30,000 scfm for a 1,000 ton/day plant.

Section XXX.8040 (page L-7) attempts to deal with "Breakdown, Malfunction and Operation Changes". We would like to point out that soybean oil plants can lose several thousand gallons of hexane upon normal start-up and shut-down. These procedures can be expected to occur several times per quarter. Accordingly, we would request a specific exemption in the regulations for emissions which result from start-up and shutdown.

Section XX.8020 prohibits "the disposal" of more than 1.5 gal/day of VOC. Obviously, VOC can be said to be "disposed of" during normal operation of a soybean plant (i.e., hexane evaporation). Accordingly, the section should be modified to make it clear that the prohibited act includes only the intentional discarding of VOC material.

Moreover, and a fundamental shortcoming, the guidance document makes no distinction as to plant size, plant age, seed quality (as it affects hexane loss), or type of seed processed. In fact, some seeds are much more difficult to desolventize than are soybeans.

The compliance schedules set forth in Section XX.9240 are unnecessarily short. The equipment which will be required to comply with the regulations will require extensive engineering and will involve long lead-time purchases. Furthermore, in most cases the statutorily mandated compliance date is December 31, 1987. Accordingly, we believe it is an unwarranted intrusion into the State's prerogative to have USEPA "suggest" that compliance must be achieved many years sooner.

In conclusion, we would again like to emphasize our basic contention, which is that the vegetable oil industry should not be included in the guidance document which you are now preparing for distribution to the States. In view of the fact that your own agency has requested that States not take action on vegetable oil regulations at this time, inclusion of the vegetable oil industry in the guidance document simply increases the paperwork burden and is likely to lead to needless confusion. If it is in fact your agency's intention to decrease the regulatory burden, as we often hear Mr. Costle say, here would be a good place to start.

Cordially,

Sheldon J. Hauck
President

PANELING

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vanply

July 3, 1979

Mr. Tom Williams
Control Programs Development Division
MD-15
Environmental Protection Agency
Research Triangle Park, N. C. 27711

Dear Mr. Williams:

As a member of the printed interior panel prefinishing industry, we have closely followed the progress of the development of EPA recommendations which affect our industry. We are aware of the many hours of research and the time spent meeting with industry representatives and coating suppliers. We feel the recommendation of limiting volatile organic chemical emissions to 2.9 kp per 100 square meters of coated finished product (6.0 lbs./1000 sq.ft.) is realistically achievable by 1982 and will make a significant impact on air quality when compared to the existing standard.

We also feel a limit of 6.0 lbs./1000 sq.ft. is, in fact, based on the application of reasonable available control technology (RACT). Problems have arisen in some areas, but we feel in time the EPA regulations can be achieved. As you stated in your cover letter, "The intent of the document is to provide a rational and factual basis for State and local agencies to develop industry-specific regulations in their own codes". Vanply, Inc., as a company, believes the recommendations set forth for our industry are "rational" and "factual". We ask the State and local agencies to accept the recommendations as illustrated. Any further restrictions or lowering of limits through legislative action could not be realistically acomplished.

Sincerely yours,

VANPLY, INC.

Don R. McDonald
Vice President of Operations

DRMc/jb

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PREFINISHED PRODUCTS DIVISION P.O. Box 8289 900 North Hoskins Road Charlotte, N C 28208 Telephone (704) 392-1315

PHARMACEUTICAL

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PHARMACEUTICAL MANUFACTURERS *Association*

July 12, 1979

Mr. Tom Williams
Control Programs Development Division
MD-15
Environmental Protection Agency
Research Triangle Park, North Carolina 27711

Re: Comments on Draft Regulations for the Group II Control Technique Guidelines for Volatile Organic Compounds

Dear Mr. Williams:

The Pharmaceutical Manufacturers Association is a voluntary non-profit association composed of 140 companies engaged in the development, manufacture and marketing of prescription and ethically promoted pharmaceuticals, medical devices and diagnostic products.

While we appreciate the opportunity to comment on the draft, we are concerned about the informal nature of the comment procedure, as there is no assurance that PMA's comments or comments of other interested parties will be considered in finalizing the sample regulations. Indeed, our comments will apparently only be appended, along with other comments, to the guidance document distributed to the states. In your cover letter accompanying the draft regulations you note that they are, "sample regulations (that) are illustrative in nature and are not to be construed as rulemaking by EPA." You further note that state agencies will propose their own regulations and hold public hearings on their inclusion in state implementation plans. However, experience has shown that many states adopt EPA's sample regulations unchanged in their implementation plans. Thus representatives of industry and others are deprived of any meaningful opportunity to participate in the rulemaking process.

In order to help assure that such a situation does not occur, we recommend that the guidance document contain a preface which strongly emphasizes the illustrative nature of the regulations and which underscores the need for public participation in the rulemaking procedure.

In addition, we would like to make the following comments on specific sections of the draft regulations.

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Condenser, page A-2

The definition of condenser should be expanded to include surface condenser and barometric condenser. A second sentence should be added as follows: "A surface condenser effects condensation by indirect contact between the coolant and the process gas stream. A barometric condenser effects condensation by direct contact between the coolant and the process gas stream."

Source, page A-4

"Source" is defined as "any article, container, machine, process equipment, or other contrivance from which air pollutants emanate or are emitted, either directly or indirectly." While this definition is consistent with that usually incorporated in state implementation plans, it is inconsistent with EPA's Prevention of Significant Deterioration regulation (43 FR 26380) and the Emissions Offset Interpretive Ruling (44 FR 3274). Both of those define "source" as "any structure, building, facility, equipment, installation or operation (or combination thereof) which is located on one or more contiguous or adjacent properties and which is owned or operated by the same person (or persons under common control)." In order to prevent confusion, we recommend that another term be employed to describe the concept of "source" as used in the draft regulation.

Volatile Organic Compound, page A-4

VOC is defined as having a "vapor pressure greater than 0.1 millimeters of mercury at standard conditions." The vapor pressure used in the definition is too low, and should be set at 2.5 psia at standard conditions. A vapor pressure of 2.5 psia more accurately reflects a volatility commensurate with the proposed general exemption of sources emitting less than 15 lbs/day or 3 lbs/hr. EPA's suggested standard of 0.1 millimeters of mercury has not been justified, and in fact has been based only on subjective opinions as to the appropriate standard for the coating industry.

If a state will not accept a vapor pressure of 2.5 psia, then we recommend that no vapor pressure limit be included in the definition of VOC, as individual RACT regulations have their own vapor pressure limits anyway.

§ XX.9420 Applicability, page F-3

We note with approval that Subsection (a) has been changed over earlier drafts to make the regulation applicable only to nonattainment areas in a state.

Subsection (b) states that the regulation applies to all sources of VOC that have the potential to emit 6.8 kg/day (15 lb/day) or more. In order to assure conformance with recommendations made in the Control Techniques Guideline (CTG) document, we recommend that the following sentence be added to this subsection: "Implementation should be carried out on a plant by plant basis."

We recommend that the last sentence of the first paragraph of the discussion section be replaced by the following language from the Control Techniques Guideline (CTG) document: "Since many of these individual vents are likely to be small in any given plant, it may often be reasonable to regulate on a plant by plant basis. This approach involves determining which synthesized pharmaceutical manufacturing facilities emit large amounts of VOC and within such plants which operations are significant sources. Control requirements would then be imposed after considering local air quality, the mass rate of emissions, control cost estimates, and plant safety effects."

For clarity, the third and fourth sentences of the second paragraph of the discussion section should be revised as follows: "Facilities which perform those functions probably make up the majority of the pharmaceutical facilities in the United States. However, those facilities that are included in the definition of synthesized pharmaceutical manufacturing emit the majority of VOC."

§ XX.9430 Provisions for Specific Processes, page F-4

Subsection (b) (1) should require an 85%, rather than 90%, reduction in VOC emissions from all air dryers and production equipment exhaust systems in order to be consistent with current state requirements.

Subsection (d) requires owners/operators to enclose all centrifuges, rotary vacuum filters, and other filters which process liquids containing VOC with vapor pressures of 3.50 kPa (0.5 psi) or more at 20°C. We recommend that the sentence be changed to read, "...and other filters having an exposed liquid surface where the liquid contains VOC..." Many pieces of process equipment are operated in a closed fashion to provide for an inert gas purge for safety reasons. Further, this is the language of the CTG document.

Discussion, page F-6

The last sentence in the first paragraph requires that the temperature of outlet gases from the surface condenser be monitored in order to determine compliance with § XX.9430 (a) (1). This subject should more logically be addressed in the section on monitoring. In any event, such a procedure is not current practice and would be expensive to implement. Since different monitoring methods are used at different facilities, we recommend that the use of coolant outlet temperature, vapor outlet temperature, or condensate outlet temperature be allowed for determining compliance.

The discussion raises the issue of what emission limit should apply when several different sources, each with a different VOC component, are manifolded to a single control device. We recommend that under those circumstances the appropriate emission limit should be determined on a case by case basis.

The sixth paragraph of the discussion section indicates that the 150 kg/day figure in § XX.9430 (b) was selected because it is the limit below which it is economically infeasible to control VOC emissions at a 90% emission reduction efficiency. We recommend that a final sentence be added to the paragraph as follows: "Current energy and economic factors may suggest an emission reduction efficiency of less than 90%."

§ XX.9440 Compliance Schedule, page F-7

Subsection (a) sets forth compliance schedules based on a January 1, 1980 effective date of the regulation. In general, one and two-year compliance schedules are much too short, and do not reflect real industry experience in achieving compliance. With regard to the specific dates set forth, we recommend that commencement of the compliance schedules should begin no sooner than 180 days after adoption of the State Implementation Plan (SIP). As drafted, Subsection (a) (1) (i) would require an owner/operator to submit final plans for emission control systems or process equipment, or both, by April 15, 1980. To meet such a timetable, preliminary planning would have to be under way as of this writing and would have to be based on an uncertain knowledge of the regulations.

In addition, there is no need for separate compliance schedules for process equipment changes and add-on control devices, and incineration equipment without heat recovery. Rather, we recommend that owner/operators submit, within 180 days of approval of the SIP, a compliance plan that includes target dates for (1) awarding contracts or issuing purchase orders; (2) initiating onsite construction or installation of equipment; (3) completing onsite construction or installation of equipment; and (4) achieving final compliance.

Subsection (b) should be eliminated in light of our previous suggestions.

Discussion, page F-8

Approval of the Food and Drug Administration is required before process modifications can be made by pharmaceutical manufacturers. This will, of course, place constraints on the ability of manufacturers to meet compliance deadlines. Therefore, we recommend that the following be added to the discussion section:

> "Manufacturers of synthesized pharmaceutical products must normally seek approval of the Food and Drug Administration for process changes. Compliance schedules must be flexible enough to allow additional time for FDA approval."

§ XX.9450 Testing and Monitoring, page F-10

Subsection (d) requires continuous monitoring of add-on control equipment, regardless of size. In order to reduce the burden of this requirement, we recommend that continuous monitoring be required only for add-on control equipment with a potential to emit more than 100 tons per year of regulated pollutants. In addition, only periodic monitoring should be required for the parameters referred to in subsections (d) (3) and (4).

§ XX.801.0 Applicability, page L-2

Subsection (b) (1) provides that the regulations are not applicable to sources whose emissions are less than 6.8 kilograms (15 pounds) per day, and less than 1.4 kilograms (3 pounds) per hour, provided that the emission rate is determined and certified by March 1, 1980. We recommend that a period be inserted after "...6.8 kilograms (15 pounds) per day", for two reasons. First, § XX.9420 indicates that the 1.4 kg/hr standard is not applicable to the manufacturers of synthesized pharmaceutical products. Second, the certification requirement is unnecessary and will only add to the paperwork burden of both the states and industry.

Subsection (b) (2) provides that the regulations are not applicable to sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance. In order to clarify the provision, we recommend that the phrase "...such as research facilities, pilot plant operations, and laboratories" be added after the word "acceptance".

Discussion, page L-3

For the reasons set forth in our comments on § XX.8010 (b) (1), we recommend that all references to the 1.4 kg/hr limitation and the certification requirement be deleted from the discussion section.

§ XX.8020 Disposal of Volatile Organic Compounds, page L-4

This section prohibits the disposal of VOC or materials containing VOC in a manner that would permit their evaporation into the atmosphere. We recommend that the entire section be deleted, as it would be virtually impossible to comply with or to enforce. In addition, disposal of hydrocarbons recovered by control equipment under this regulation is already covered by the Water Pollution Control Act, the Resource Conservation and Recovery Act, the Safe Drinking Water Act, and other applicable state and local regulations.

§ XX.8030 Inspection, Maintenance and Operating Procedures, page L-5

Subsection (a) requires the owner/operator of a facility to make available to the Director an Inspection and Maintenance Manual for all control equipment. Current FDA regulations require pharmaceutical manufacturers to prepare written maintenance procedures for process equipment, which are available for examination by FDA inspectors. We recommend that similar policy be adopted with respect to control equipment so that firms may be consistent in their approach to the development of procedures for all process and control equipment, thereby eliminating needless duplication of effort. Subsection (a) should be revised as follows:

> "The owner and operator of a facility subject to these regulations shall prepare written inspection, maintenance and operating procedures for all equipment, and such procedures shall be readily available for use by operating personnel and inspection by the Director."

§ XX.8040 Breakdown, Malfunction and Operation Changes, page L-7

Subsection (a) requires owners/operators to notify the Director of breakdowns or malfunctions of control equipment of more than 1 hour duration and breakdowns or malfunctions of process equipment which cause an increased emission of air contaminants. First, we recommend that "malfunction" be defined. Second, we recommend that emergency reports be required only if the breakdown creates an immediate public health hazard. As an alternative we suggest that owners/operators be required to keep records, which would be available for inspection, of breakdowns or malfunctions of greater than 1 hour or which cause increased emissions, along with an estimate of any emission exceedance over permit levels. This requirement should apply only to sources with a potential to emit 100 tons per year or more. If this suggestion is implemented, subsections (b), (c) and (d) should be deleted.

The heading of subsection (b) is "Operation Changes", but this matter is not addressed. Indeed, the subsection continues to address breakdowns and malfunctions. For clarity, the heading should be changed. Subsection (b) also provides that affected facilities which have unreasonable breakdown or malfunction frequency of control equipment shall not be permitted to operate. We believe that inclusion of a penalty provision in the regulation is inappropriate, as penalties are normally addressed in the applicable state law. The sentence should be deleted.

Subsection (c) provides that records of malfunctions and breakdowns be retained for at least 4 years. We recommend that a 2-year period for retaining records be required. If necessary to allow for averaging of emissions or completion of enforcement cases, the period could be increased to 3 or 4 years.

Subsection (d) requires an owner/operator to notify the Director of any shutdown, breakdown or malfunction of monitoring systems or devices. Again, we believe that notification is unnecessary, and we recommend that owners/operators be required to keep records, which would be available for inspection, of any shutdown, breakdown or malfunction.

Subsection (e) states that emissions during startup, shutdown, breakdown, or malfunction that exceed emission limitations in the SIP constitute violations of the plan. We recommend that such an occurrence may constitute a violation only if due to negligence on the part of the owner/operator.

Discussion, page L-9

The next to the last paragraph of the discussion indicates that emissions in excess of emission limitations due to shutdown and startup will be considered in violation of the regulation. However, there are circumstances in which shutdown and startup will result in unavoidable process fluctuations which will result in excess emissions. The regulations should provide some flexibility for such unavoidable situations during shutdown and startup.

§ XX.8050 Circumvention, page L-14

Subsection (b) prohibits the use of gaseous diluents to achieve compliance. This provision should be deleted, as none of the emission control systems covered by the regulation or the CTG document addressed emission concentration.

§ XX.8060 Petition for Alternative Controls, page L-15

Subsection (a) sets forth the procedure by which an owner/operator can petition the Director for the use of alternative emission limits, operational and/or equipment controls for the reduction of VOC emissions. We strongly endorse inclusion of a provision which allows the use of alternative controls. However, we recommend that the following changes be made in this subsection:

a. The deadline for submission of the petition to the Director should be 180 days after approval of the SIP.

b. Rather than requiring the signature of a company officer the signature of any responsible company official should be allowed.

Discussion, page L-16

We recommend that the document allow for variable winter/summer operation schedules as an alternative control system. Pharmaceutical manufacturers may have the flexibility to manufacture substances requiring the use of volatile organic compounds during winter months, scheduling water based operations, then, for summer months. States could identify the winter months during which they have experienced no ozone episodes as permissible manufacturing months. In like manner, we recommend that such energy intensive control systems as refrigerated condensers and incinerators be allowed to be shut down during winter months.

§ XX.8070 Monitoring, Recordkeeping, Reporting, page L-19

Subsection (a) requires monitors to be installed on all process and control equipment, as required by the Director. We recommend that monitors only be required for sources with potential to emit 100 tons or more per year.

Subsection (a) also provides that monitors shall include visual and audible alarms actuated when the monitored parameters exceed design specifications. We recommend that the word "shall" be changed to "may", making the requirement optional, and that the word "and" be changed to "or", so that both visual and audible alarms are not required.

Subsection (b) (4) requires that records be retained for at least 4 years. We recommend that records be retained for a 2-year period which could be extended to 3 or 4 years if necessary to allow for averaging of emissions or completion of enforcement cases.

Subsection (c) (1) requires owners/operators to submit to the Director reports, at least annually, detailing the nature, source, and quantity of VOC emissions. We regard the requirement of annual reports as unduly burdensome, and recommend that the phrase "as a minimum" be changed to "at his request".

Discussion, page L-20

The discussion section outlines types of monitoring devices that should be considered by the Director. As previously discussed in our comment number 6, we recommend that item (3) be revised to read "a device to measure coolant outlet temperature, vapor outlet temperature, or condensate outlet temperature."

Respectfully submitted,

Bruce J Brennan

BRUCE J. BRENNAN
Vice President and
General Counsel

TIRES

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ARMSTRONG RUBBER
EXECUTIVE OFFICES: 500 SARGENT DRIVE / NEW HAVEN, CONNECTICUT 06507 / 203-562-1161

July 13, 1979

Mr. Tom Williams
Control Development Division MD-15
Environmental Protection Agency
Research Triangle Park
North Carolina 27711

Dear Mr. Williams:

The following is in response to your request for comment on the draft sample regulation for the control of V.O.C. emission from tire manufacturing:

Reference page G-2 - "Water based sprays" definition implies that no hydrocarbons are present in this material. This is correct for inside tire spray; but incorrect for (outside tire spray) presently successfully used material supplied by SWS Corporation which contains approximately 10% hydrocarbons.

Reference page G-4 - The statement, "The following list of operations are not included in the regulation primarily because of the lower emission factors for these operations", should be expanded to include the statement; that except for the Tire Building operation, the balance of tabulated operations represent in total approximately 3% of total tire plant emissions. The cost benefit of control of these sources is extremely adverse due to their dilute nature, also the pollutant tradeoff and energy requirement implications require careful consideration.

Reference page G-4 - In discussing reasons for not controlling emissions on Tire Building operations the statement is made that "controlling these emissions is generally economically unfeasible. However, specific circumstances may warrant otherwise." It is requested that either this comment be deleted or the specific circumstance that would warrant control be defined.

Reference page G-6 - Section 9530 (a)(2)(i) and page G-7 - Our experience indicates that 95% control equipment efficiency for carbon bed adsorption is possibly not achievable. Suggest 90% as a more reasonable number.

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Reference page G-8 - Last paragraph should be corrected to indicate that presently successfully used green tire outside spray supplied by SWS contains approximately 10% hydrocarbon. Other materials currently being subjected to trials, contain approximately 1% hydrocarbon.

Reference page G-9 - Compliance schedule time of one year is inadequate for substitution of water based sprays, a process change involving safety considerations, should be provided a two year compliance schedule.

Reference page G-11 - Last sentence. "Also, too many schedules extending to the attainment date might prevent a state from showing reasonable further progress toward attainment". I respectfully submit that in any determination of what is a reasonable effort (and time frame) for tire companies to comply with new regulations, that a state's ability to demonstrate adequate increments of progress should not be a factor.

Reference page L-5 - A four year record keeping requirement is considered excessive.

Reference page L-7 - (1st paragraph) - Requirement for notification of any incident of breakdown or malfunction of more than one hour duration of control equipment - is considered too burdensome for all parties concerned.

Reference page L-7 - (2nd paragraph) - Statement "No affected facility which has an unreasonable breakdown or malfunction frequency of control equipment shall be permitted to operate". The term unreasonable requires definition.

Reference page L-7 - (3rd paragraph) - Four year record retention time is excessive.

Reference page L-7 - (last paragraph) - "Emission during start-up, shutdown, breakdown or malfunction that exceed emission limitations in S.I.P. plan constitute violations of that plan". Allowances should be made for extenuating circumstances; as long as good management practices are followed some discretionary judgement should prevail before citing sources for violations of emission limitations under stated conditions.

Reference L-19 - "Monitoring, Record Keeping, Reporting". - Considered excessive.

Reference page L-20 (1st sentence) - While devices to initiate regeneration upon sensing breakthrough are available, they are much more costly than time devices which depend on one's ability to predict time-wise when breakthrough will occur. This requirement should be deleted. If carried to extremes this equipment control device requirement could represent a major part of equipment investment.

Sincerely,

F.M. Luysterborghs
F.M. Luysterborghs

cc: Janet Weller

Goodrich

The BFGoodrich Company
500 South Main Street
Akron, Ohio 44318
Address Reply To: Dept. 3201
Bldg. 10-B

July 13, 1979

Control Programs Development Division
Office of Air Quality Planning and Standards
United States Environmental Protection Agency
Research Triangle Park, North Carolina 27711

Attn: Tom Williams
Project Officer

Dear Mr. Williams:

Attached are our comments to the draft sample regulation regarding the Control of VOC Emissions from Pneumatic Tire Manufacturing Facilities.

Should you have any questions after reviewing our comments, please feel free to call me at 216-379-2781.

Yours truly,

The BFGoodrich Company

R. R. Clark, P.E.
Environmental Engineer

lw
cc/J. J. Boyd
D. L. Corbett
R. W. Strassburg
T. W. Peterson
M. E. Rossman

Attachments

COMMENTS ON
DRAFT
SAMPLE REGULATIONS

CONTROL OF VOLATILE ORGANIC

EMISSIONS FROM TIRE MANUFACTURING

TO:
TOM WILLIAMS
PROJECT OFFICER
CONTROL PROGRAMS DEVELOPMENT DIVISION
OFFICE OF AIR QUALITY PLANNING AND STANDARDS
U. S. EPA
RESEARCH TRIANGLE PARK, NORTH CAROLINA 27711

BY:
RONALD R. CLARK, P.E.
ENVIRONMENTAL ENGINEER
THE B F GOODRICH COMPANY
DEPT. 3201 BLDG. 10-B
500 SOUTH MAIN STREET
AKRON, OHIO 44318
TELEPHONE: 216-379-2781

DRAFT

July 13, 1979

THE B F GOODRICH COMPANY APPRECIATESTHE OPPORTUNITY TO COMMENT ON THE DRAFT SAMPLE REGULATIONS FOR CONTROL OF VOC'S FROM TIRE MANUFACTURING FACILITIES. OUR COMMENTS ARE BRIEF AND ONLY COVER THE GENERAL DEFINITIONS SECTION AND THE MANUFACTURE OF PNEUMATIC RUBBER TIRES SECTION.

ATTACHED ARE B F GOODRICH COMPANY'S COMMENTS ON THE THREE DRAFTS OF THE CTG DOCUMENT FOR TIRE MANUFACTURING. SOME OF THESE COMMENTS ARE STILL APPROPRIATE TO THE FEASIBILITY OF IMPLEMENTING THE LIMITATIONS OUTLINED IN THE SAMPLE REGULATION. THEREFORE, WE AGAIN REQUEST THE EPA REVIEW THESE COMMENTS. THE B F GOODRICH COMPANY ALSO SUPPORTS THE COMMENTS SUBMITTED BY THE RUBBER MANUFACTURERS ASSOCIATION, AND REQUESTS THESE COMMENTS BE THOROUGHLY REVIEWED ALONG WITH OURS.

THE FOLLOWING ARE SPECIFIC COMMENTS LISTED PAGE BY PAGE. WE HAVE TRIED TO MAKE CONSTRUCTIVE COMMENTS SO THAT A USEFUL, ACCURATE DOCUMENT WILL BE PUBLISHED.

PAGE A-3: **DEFINITION** OF REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT)

THE RUBBER INDUSTRY HAS A WIDE VARIETY OF PLANTS AND PRODUCTION OPERATIONS. BECAUSE OF THE UNIQUE NATURE OF EACH PLANT WHAT IS RACT AT ONE FACILITY MAY NOT BE REASONABLE FOR USE AT ANOTHER FACILITY. THEREFORE, WE BELIEVE THE DEFINITION OF REASONABLY AVAILABLE CONTROL TECHNOLOGY SHOULD BE AMENDED BY ADDING THE FOLLOWING SENTENCE:

> "RACT FOR A PARTICULAR SOURCE IS DETERMINED ON A CASE-BY-CASE BASIS, CONSIDERING THE TECHNOLOGICAL AND ECONOMIC CIRCUMSTANCES OF THE INDIVIDUAL SOURCE".

PAGE A-3: DEFINITION OF ECONOMICAL INFEASIBILITY

A SAMPLE DEFINITION IS GIVEN FOR TECHNOLOGICAL INFEASIBILITY, THEREFORE, A DEFINITION SHOULD BE GIVEN FOR ECONOMICAL INFEASIBILITY. WE RECOMMEND THE FOLLOWING DEFINITION:

> "ECONOMICAL INFEASIBILITY: ECONOMICALLY INCAPABLE OF BEING ACCOMPLISHED OR CARRIED OUT AS A MATTER OF PRACTICALITY AND SOUND BUSINESS JUDGEMENT".

IT SHOULD BE NOTED BASED ON THE COST EFFECTIVENESS DATA IN THE CTG DOCUMENTS PUBLISHED TO DATE WE BELIEVE IT IS CLEARLY INFEASIBLE TO REQUIRE CONTROLS WHEN COSTS EXCEED $250/TON OF VOC CONTROLLED. WHEN MINIMUM COSTS OF CONTROLS EXCEED THIS LEVEL THE CTG CONTAINS A STATEMENT INDICATING DUE TO THE HIGH COSTS OF CONTROLLING EMISSIONS IT MAY NOT BE REASONABLE TO REQUIRE EMISSION CONTROLS. (SEE CTG FOR GRAPHIC ARTS - ROTOGRAVURE AND FLEXOGRAPHY, PAGE 1 - 6, OR CTG FOR SURFACE COATING OF MISCELLANEOUS PARTS AND PRODUCTS, P. 4-2).

PAGE G-2 XX .9510 (b) 1

THE DEFINITION OF "PNEUMATIC RUBBER TIRE MANUFACTURE" IS NOT CONSISTENT WITH THE PROCESSES COVERED BY THE CTG. THE CTG ONLY ADDRESSES PASSENGER-TYPE RUBBER TIRES. ALL TIRES, INCLUDING LARGE OFF-THE-ROAD TIRES, ARE "MANUFACTURED ON ASSEMBLY LINES USING AUTOMATED EQUIPMENT". (EMPHASES ADDED) HOWEVER, MANY SECTIONS OF THE CTG DOCUMENT ARE NOT APPROPRIATE TO THE MANUFACTURING OF OFF-THE-ROAD TIRES. THIS DEFINITION IS AN ISSUE BEING DISCUSSED AS A PART OF THE EPA AND THE TIRE INDUSTRY LITIGATION INVOLVING THE SUBJECT. WE REQUEST THE DEFINITION BE ADOPTED WHICH IS DEVELOPED AS A RESULT OF LITIGATION.

PAGE G-2 (CONT'D):

THE DEFINITION OF "WATER-BASED SPRAYS" IS NOT ACCURATE. WE ARE NOT AWARE OF ANY WATER-BASED RELEASE AGENTS COMMERCIALLY AVAILABLE WHICH CONTAIN NO ORGANIC SOLVENTS. TO AVOID FUTURE CONFUSION WE RECOMMEND THE DEFINITION BE CHANGE TO READ AS FOLLOWS:

> "'WATER-BASED SPRAYS' MEANS RELEASE COMPOUNDS, SPRAYED ON THE INSIDE AND OUTSIDE OF GREEN TIRES, IN WHICH SOLIDS, WATER, AND EMULSIFIERS HAVE REPLACED ALL BUT TRACE AMOUNTS OF ORGANIC SOLVENTS".

PAGE G-3: DISCUSSION

THE THIRD AND FOURTH SENTENCES IN THE FIRST PARAGRAPH SHOULD BE REVISED TO READ:

> "THE RACT CONTROL TECHNIQUE IS CONVERSION TO WATER-BASED SPRAYS. THE ALTERNATIVE CONTROL METHODS, CARBON ABSORPTION AND INCINERATION, WOULD NOT NORMALLY BE CONSIDERED RACT. CARBON ABSORPTION IS NOT TECHNICALLY FEASIBLE DUE TO SOLIDS PLUGGING THE FILTER BEDS. INCINERATION IS NOT ECONOMICALLY FEASIBLE DUE TO THE LARGE EXHAUST AIR FLOWS, AND THE FUEL REQUIREMENTS TO INCINERATE THESE AIR FLOWS".

PAGE G-4:

WE STRONGLY OBJECT TO THE CONCLUSIONS INFERRED IN THE SECOND PARAGRAPH, PAGE G-4, THE REFERENCE TO CONTROLLING OTHER TIRE MANUFACTURING PROCESSES, AND THE INCLUSION OF UNSUPPORTED EMISSION FACTORS FOR THESE PROCESSES. EXCEPT FOR TIRE BUILDING, THERE IS NO DATA WHICH SUPPORTS THE EMISSION FACTORS GIVEN IN THE TABLE. WITHOUT INFORMATION QUANTIFYING THE EMISSION IT IS IMPOSSIBLE TO KNOW IF CONTROLS ARE EVEN NECESSARY. THEREFORE, IT SHOULD NOT BE IMPLIED THAT THE STATES MAY FIND CASES IN WHICH CONTROLS ARE WARRANTED. THIS PARAGRAPH SHOULD BE REVISED TO READ:

PAGE G-4 CONT'D:

"THE OTHER MANUFACTURING PROCESSES IN A TIRE PLANT (e.g) TIRE BUILDING, COMPOUNDING, CURING) DO NOT WARRANT THE INSTALLATION OF RACT".

PAGE G-5:

THE FIRST PARAGRAPH SHOULD BE REVISED TO READ:

"THE APPLICABILITY OF THE GUIDELINE WILL NOT BE LIMITED BY THE SIZE OF THE PLANT. SINCE THE AVERAGE PLANT PRODUCES 16,000 TIRES PER DAY AND EMITS AN ESTIMATED 1,000 METRIC TON/YR (1,100 ton/yr), IT IS ASSUMED THAT ALL PLANTS WHICH MANUFACTURE PNEUMATIC RUBBER PASSENGER-TYPE TIRES LOCATED IN NON-ATTAINMENT AREAS WILL BE SUBJECT TO THIS REGULATION".

PAGE G-6 XX .9530 (a)2 (iii):

IF 90 PER CENT REDUCTION EFFICIENCY IS SATISFACTORY FOR INCINERATION, THERE IS NO JUSTIFICATION FOR SETTING THE MINIMUM REDUCTION EFFICIENCY FOR AN ALTERNATIVE VOLATILE ORGANIC COMPOUND EMISSION REDUCTION SYSTEM AT 95.0 PER CENT. THEREFORE, WE REQUEST THAT THE 95.0 PER CENT REQUIREMENT BE LOWERED TO THE 90.0 PER CENT LEVEL.

PAGE G-8: DISCUSSION

THE FIRST PARAGRAPH DISCUSSES THE MINIMUM CAPTURE EFFICIENCY REQUIREMENT, AND REQUESTS COMMENTS ON METHODS OF ASSURING THAT MAXIMUM REASONABLE CAPTURE WILL BE ATTAINED. WE BELIEVE THIS IS SOMETHING THAT WILL HAVE TO BE WORKED OUT ON A CASE-BY-CASE BASES BETWEEN PLANTS AND THE STATES. VENTILATION IS MORE OF AN ART THAN A SCIENCE AND BECAUSE OF THIS, ONE USUALLY DOES NOT KNOW WHAT THE CAPTURE EFFICIENCY WILL BE UNTIL IT IS TESTED. THEREFORE, WE WOULD SUGGEST IT BE RECOMMENDED THE STATES REVIEW WITH EACH PLANT ITS PROPOSED VENTILATION SYSTEM AND AGREE TO ITS GOOD ENGINEERING DESIGN. IF AFTER INSTALLATION TESTING SHOWS THE CAPTURE EFFICIENCY IS BELOW THAT ANTICIPATED, IT WILL HAVE BEEN ALREADY AGREED THAT THE BEST RACT SYSTEM WAS INSTALLED.

PAGE G-9 XX 9540:

"TIRES" IS A PRODUCT THAT HAS TO ADHERE TO STRINGENT SAFETY REQUIREMENTS. ANY PROCESS OR TECHNOLOGY CHANGES HAVE TO GO THROUGH A LENGTHY EVALUATION PROCESS BEFORE IMPLEMENTATION CAN BE EVEN CONSIDERED. THE ESTABLISHMENT OF SPECIFIC DATES FOR COMPLIANCE IN MANY CASES MAY NOT BE POSSIBLE. THIS SHOULD BE NOTED IN THE SAMPLE REGULATIONS TO THE STATES.

BEING SPECIFIC, BFGOODRICH PROBABLY COULD NOT COMPLY WITH A REQUIREMENT TO CONVERT TO WATER-BASED SPRAYS WITHIN ONE YEAR FOR SOME PRODUCTS.

THIS COMPLETES OUR SPECIFIC COMMENTS ON THE SAMPLE REGULATION. OUR UNDERLYING CONCERN IS THAT THE SAMPLE REGULATION STATE IT IS NOT MANDATORY, AND THAT STATES HAVE FLEXIBILITY TO DETERMINE WHETHER, AND TO WHAT EXTENT, CONTROL OF HYDROCARBON EMISSIONS IS NECESSARY AT EACH PARTICULAR TIRE PLANT. THE SAMPLE REGULATION SHOULD BE A GENERAL GUIDELINE FOR THE STATES TO REFER TO DURING THE DEVELOPMENT OF SOURCE SPECIFIC REGULATIONS.

7/13/79
lw

Firestone

CERTIFIED--Return
Receipt Requested

July 6, 1979

Mr. Thomas Williams
Control Programs Development Division
MD-15
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

Re: Sample Regulations to Implement CTG for
Manufacture of Pneumatic Rubber Tires

Dear Mr. Williams:

On behalf of The Firestone Tire & Rubber Company, I am submitting comments on the above-referenced document which you have circulated to all interested parties for comment. The above-referenced sample regulations attempt to implement the CTG for pneumatic rubber tires which was issued in December, 1978.

Firestone first objects to the concept of sample regulations which would be distributed to states in order that the states may incorporate the CTG into their respective state implementation plans. We do not believe that issuance of CTG's by the U.S. Environmental Protection Agency is authorized by the Clean Air Act, and we do not believe that sample or model regulations are authorized. We, further, do not see the need for the sample regulations since the CTG is quite explicit and detailed as to the technical information which the EPA wishes to communicate to the states. We believe that the states are more than capable of developing their own regulations from the CTG.

On numerous occasions, representatives of the U.S. EPA have informed Firestone representatives that states are not required to incorporate the CTG, verbatim, into their state regulations; but rather, the state has flexibility and discretion with regard to including the recommendations of the CTG into their state implementation plans. We strenuously object to the sample regulations since they make no mention of state flexibility or discretion in applying the CTG to the sources within a particular state. The states must be given guidance that they are authorized to conduct case-by-case determinations of RACT for sources within their state, independent of the CTG recommendation.

The sample regulations require control of undertread cementing, tread end cementing, bead dipping and green tire spraying. We do not believe that carbon adsorption or incineration represents RACT for tread end cementing, particularly since Firestone employs manual tread end cementing. The December, 1978, CTG did not even consider manual tread end cementing or does not even acknowledge that EPA was aware of such a process. Firestone's use of manual tread end cementing utilizes less solvent than the 15 grams per tire indicated in the sample regulations. A survey of Firestone plants has revealed usage of 3.5 to 8.0 grams per tire with an average application of 6.2 grams of solvent per tire. Firestone's manual tread end cementing, therefore, approaches a "controlled" tread end cementing station and we believe that Firestone is already meeting RACT on tread end cementing due to the lower VOC emissions. Firestone, further, submits that it is not physically possible to install capture equipment which would even approach 85% capture efficiency due to the particular nature of manual tread end cementing and the need for worker accessibility.

Firestone also submits that carbon adsorption and incineration are not RACT for the bead dipping operation. The sample regulations state that these emissions will be about 3% of the total VOC emissions from an average facility. The CTG estimates capture costs for carbon adsorption at $250,000, which does not seem reasonable considering the amount of emissions. Incineration for control of bead dipping operations would be less costly but would require substantial quantities of fuel energy and would produce emissions of air pollutants roughly equivalent to the emissions being controlled.

Control of undertread cementing has been accomplished at one plant in the U.S. and we view this technology as still in the experimental stage and not RACT. Depending on plant configurations, there may also be serious feasibility questions and excessive costs in retrofitting control technology of undertread cementing.

Our Company notes that the sample regulations make several references to incineration without specifying whether the reference is to direct flame or catalytic incineration.

The sample regulations include other operations emitting VOC's for which no control is being recommended. Tire building is one of these areas and the sample regulations include some justification for not including tire building emissions. We object, however, to the last sentence in paragraph 2 on page G-4 of the regulations which indicates that specific circumstances may warrant otherwise with regard to control of tire building. We respectfully request that this sentence be deleted since no explanation is given for this sentence and EPA has discovered no circumstances under which control of tire building emissions would represent RACT. Our Company further questions the accuracy of the emission rates contained in the table on page G-4 of the model regulations.

Section XX.9530(a)(1) of the sample regulations indicates that the capture system shall be designed to achieve capture of up to 85% of VOC emitted. We are not certain of the meaning of this provision, but we object to 85% capture efficiency as a goal for any of these processes. The CTG indicates capture efficiencies of 65-85% for undertread cementing, 65-85% for tread end cementing and 75-85% for bead dipping. (Table 1-1, page 1-4.) Thus, the sample regulations seize on the maximum possible capture efficiency as indicated by the CTG. The lower end of the range, as specified in the CTG, is a much more reasonable capture efficiency although Firestone has serious reservations about even this number. Firestone, particularly, believes that a 65% capture efficiency cannot be achieved from control of manual tread end cementing and undertread cementing.

The model regulations also specify a 95% efficiency of carbon adsorption across the control device and Firestone objects to this number as being unreasonable and suggests that such removal efficiency be specified as 90%.

The sample regulations indicate that water-based sprays are presently available for green tire spraying. It is Firestone's experience that water-based sprays currently available may contain more than 2% solvent and may contain up to 11% solvent in some situations. We must also point out that carbon adsorption is not a viable alternative for control of green tire spraying since particulates would "carry over" into the carbon adsorption bed and plug the bed, making it inoperative.

Firestone, further, objects to Section XX.9540 of the sample regulations dealing with compliance schedules. First, we believe that there is no need for the regulations to include detailed compliance schedules with increments of progress since this is usually best determined on a case-by-case basis. A final compliance date is all that is needed to be included in the regulations and Firestone submits that this compliance date should not be specified as earlier than December 31, 1982. We believe that more than two years will be needed for add-on control equipment and more than one year will be needed for process modifications in our particular safety-related industry.

We appreciate the opportunity to provide comments on the sample regulations which have been proposed and we hope that EPA will carefully consider the foregoing comments.

Very truly yours,

Robert M. Walter
Assistant Counsel
(216/379-6693)

RMW:slp

Firestone

CERTIFIED--Return
Receipt Requested

July 12, 1979

Mr. Thomas Williams
Control Programs Development Division
MD-15
U.S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

Re: Sample Regulations to Implement CTG for
Manufacture of Pneumatic Rubber Tires

Dear Mr. Williams:

On behalf of The Firestone Tire & Rubber Company, I am submitting additional comments on the above-referenced document which you have circulated to all interested parties for comment. The following comments supplement our written comments submitted by letter dated July 6, 1979. Those comments address issues raised by the sample regulations which attempt to implement the CTG for pneumatic rubber tires.

The sample regulations distributed go beyond the CTG for pneumatic rubber tires and suggest regulations dealing with testing and monitoring; disposal of volatile organic compounds; inspection, maintenance and operating procedures; breakdown, malfunction and operation changes; and monitoring, recordkeeping and reporting. Our Company respectfully submits that these provisions should not be included in the sample regulations. We believe that establishment of such requirements is best handled on an individual basis by the states and that these matters are totally within the discretion of each state. Firestone also believes that many of these requirements must be determined by each state in light of the particular industry involved, the particular control techniques utilized and the characteristics of the operation and plant which would be affected.

We hope that EPA will consider the foregoing comments as well as the comments submitted by our July 6, 1979, letter.

Very truly yours,

Robert M. Walter
Assistant Counsel
(216/379-6693)

THE FIRESTONE TIRE & RUBBER COMPANY • 1200 FIRESTONE PARKWAY • AKRON, OHIO 44

RMW:slp

GENERAL
TIRE

THE GENERAL TIRE & RUBBER COMPANY

ONE GENERAL STREET AKRON OHIO 44329

July 12, 1979

Mr. Tom Williams
Control Programs Development Division MD-15
Research Triangle Park, NC 27711

Re: Comments to a Guidance Document for the Group II Control Technique Guidelines for Volatile Organic Compounds

Gentlemen:

The following comments are in response to the document identified above, transmitted to "all interested parties" in your letter of June 15, 1979. Currently, litigation is in progress in the United States District Court for the District of Delaware with the Rubber Manufacturers Association, Inc., The General Tire & Rubber Company, and eleven other rubber manufacturers as plaintiffs and the U.S. Environmental Protection Agency as defendant, case identification being "Civil Action No. 79-189." In that lawsuit, the plaintiffs have challenged many aspects of the procedures and substitutive provisions employed by the EPA in the development and implementation of the control technique guidelines entitled "Control of Volatile Organic Emissions from Manufacturer of Pneumatic Rubber Tires." Since many of the substitutive provisions of the subject "Guidance Document" are identical and, in some cases, even more stringent than the CTG, which is the subject of the lawsuit, and since the proposed promulgation of the subject document by EPA will equally violate the procedural objections in the lawsuit made to the promulgation of the CTG, our Company objects to the issuance of the subject "Guidance Document."

A copy of the complaint in the referenced lawsuit is attached hereto and made a part hereof by this reference and shall constitute specific objections and comments to the subject "Guidance Document" and to the implementation by your agency of the "Guidance Document". To the extent the subject document is more stringent in its requirements for control of volatile organic compounds than the CTG, objection is made beyond the terms of the attached complaint, to the provisions that are more stringent.

A partial list of substitutive provisions follows to which specific objection is made:

1) Coverage of the tire industry. The tire industry's contribution to air pollution resulting from the manufacture of tires in the area sought to be controlled by the CTG and "Guidance Document" is such a small portion of the total pollutants of this nature that, in view of the cost and energy requirements, it is unreasonable to require their control.

2) The definition of pneumatic rubber tire manufacture should be clarified to indicate that only tires manufactured on automatic assembly lines and falling within the size ranges of passenger and light trucks are to be controlled by the guideline.

3) Page G-3. Applicability - This statement is too broad and includes facilities that contribute insignificantly to hydrocarbon emissions.

4) Page G-3. Tread end cementing and bead dipping inclusions in the applicability provisions is unreasonable in view of the minute contribution to hydrocarbon emissions and the costs and energy requirements for their control.

5) Page G-4. There are no known circumstances which would cause the inclusion of the list of operations that are considered infeasible from an economic point of view to be brought under this regulation. The suggestion that there may be specific circumstances, otherwise warranting their inclusion, is without basis in fact.

6) Page G-5. The last paragraph indicating, that since the average production facility emits a specified amount of hydrocarbons, all plants must be controlled, is an unreasonable statement and without basis in fact. There are numerous facilities that contribute insignificantly when compared to larger production facilities and their control is patently unreasonable.

7) Page G-5. In the last line on page G-5 a reference is made to the "Guidance Document" as follows:

> "Subject to this regulation."

We know of no said statute or regulation of the EPA which would elevate this "Guidance Document" to the status of a regulation. Since it is apparently deemed by EPA to be a regulation, then we object to its implementation due to violation of the rulemaking provisions of the applicable Federal Statutes and administrative law requirements for proper development of regulations.

This objection will not appear again, although there are numerous other locations through the "Guidance Document" where it is referred to as a regulation.

8) Page G-6. The capture and control values are unreasonable in view of the cost and energy requirements. Furthermore, the authorities relied upon in establishing these values are not valid since they were not developed for the purpose of controlling hydrocarbon emissions for purposes of diminishment of air pollution.

9) Page G-7. We restate the objections to the values for capture and control set forth immediately above. Furthermore, additional time is required for evaluation of water base spray to assure its compliance with quality control standards of the industry.

10) Page G-8. We object to the inclusion of tire recapping industry which has not been previously covered in CTG documents.

11) Page G-9. The compliance schedule has not been determined to be a reasonable schedule in view of product safety considerations, energy cost and cost to the manufacturers. It was developed without regard to, or without opportunity for, comment by the industry.

12) Page G-12. Objection is made to continuous monitoring due to cost and technology considerations. Test procedures relied upon in this section are not valid since they have not been established for hydrocarbon emission control in the tire industry.

Part III. The following comments to this part are with respect to the application of the general provisions on manufacture of pneumatic rubber tires only. No comments are intended to be directed to the application of Part III to the other chapters it is intended to cover, such as coated fabric operations.

13) Page L-5. Record keeping and monitoring regulations for system effectiveness, maintenance and repairs is unreasonable and overly burdensome. Certification of compliance should be sufficient.

14) Page L-7. Definition of unreasonable breakdown and malfunction as well as emissions during start up, shutdown, breakdown or malfunctions should be specified in paragraph B and E

where these terms appear. As written, it would be subject to subjective interpretation. Operator error should be an exception. We repeat our objection to recordkeeping in paragraph c.

15) The entirety of the general provisions in Part III have been prepared without opportunity for industry comment and participation and many of the provisions, too numerous to respond to in this letter, are without basis in fact and would, in operation, prove to be impracticable, unreasonable, unduly burdensome, and in some cases, impossible to implement. To the extent these general provisions would apply to coated fabric operations, we reserve the right to make comments to them as they would apply to the specific "Guidance Document" to be issued with regard to coated fabrics.

Conclusion. The "Guidance Document" and the CTG referred to in the opening paragraphs are both primarily deficient because of the failure to inform the States of their ability to adapt the information contained therein to each particular tire facility affected by these documents. Case-by-case determination of RACT is the cornerstone of the legislative history and regulatory procedures under the Clean Air Act and other environmental legislation. To the extent the "Guidance Document" does not contain this disclosure, this Company objects to its dissemination due to the disruptions in governmental communications that will result if it is adopted by the states and determined to be RACT in all cases. The states are required to apply reason in implementing federally mandated clean air standards. This would include evaluation of many factors not set forth in the "Guidance Document." To the extent the "Guidance Document" fails to illustrate for the states the factors to be considered and the flexibility available in applying the standards, this Company objects to its dissemination.

The above comments in no way are intended to modify, amend or revoke any of the allegations in the referenced lawsuit and do not constitute admissions or concessions on the part of this Company as a party plaintiff in connection with said suit.

Respectfully submitted,

James D. Troxell, Attorney

The Goodyear Tire & Rubber Company

Akron, Ohio 44316

July 13, 1979

Mr Tom Williams
Control Programs Development Division, MD-15
Environmental Protection Agency
Research Triangle Park
North Carolina 27711

Re: Comments of The Goodyear Tire & Rubber Company
On the Draft Sample Regulation for the
Control of VOC Emissions from Tire Manufacturing

Dear Mr Williams:

Goodyear appreciates the opportunity to comment on the draft sample regulation for the control of emissions of volatile organic compounds (VOC) from tire manufacturing.

We endorse and incorporate by reference the comments of the Rubber Manufacturers Association on the above-referenced draft sample regulation and submit the following additional comments for your consideration.

Definitions (Section XX.9510)

The scope of the sample regulation should be limited to the manufacture of pneumatic rubber passenger-type tires. The definition of "Pneumatic Rubber Tire Manufacture" should be replaced with the following:

> "Manufacture of pneumatic rubber, passenger-type tires" means the production of pneumatic rubber passenger-type tires on a mass production basis. Generally, "Passenger-type" tires include bead diameters through 16.5" and cross sections through 12.8". Actual dimensions of this category may vary within the industry. Most agricultural, mobile home and light truck tires in this size range are included. However, where a plant produces specialty tires for antique or other vehicles, or other tires on

an irregular basis or with short production runs, or tires produced in connection with research and design or a pilot plant, such production does not fall within the scope of this definition even where some mass production equipment is used during the manufacturing process.

Discussion (pp. 6-3 - 6-5)

Various statements in this section and throughout the draft regulation should be revised or deleted for the reason that the Clean Air Act does not authorize the use of CTGs to determine or define RACT. Any statements that state or imply a definition or determination of RACT by the use of CTGs should be deleted or modified accordingly.

We also recommend the deletion of the last sentence in this section.

Provisions for Specific Processes (Section XX.9530)

Goodyear recommends the deletion of the provisions for specific processes contained in Section XX.9530 of the draft sample regulations. In view of the fact that RACT must be determined on a case-by-case basis under the Clean Air Act, we believe it is inappropriate for either the sample regulation or the Control Technique Guideline (CTG) for tire manufacturing to prescribe particular control levels, control techniques and capture efficiencies.

RACT cannot be established, defined or prescribed on an industry-wide basis due to the fact that each facility has unique physical, process and other characteristics. In addition, the inclusion of generic provisions will infringe on the discretion of the States to determine what constitutes RACT on an individual case-by-case basis.

In view of the requirements of the Clean Air Act, we believe that both the sample regulation and the CTG should be background documents that contain general information only. We recommend that the sample regulation be revised to expressly inform the States that it contains general guidelines and that the States are free to make individual determinations regarding the types and levels of control that constitute RACT, taking into account technological and economic feasibility and the unique circumstances of each tire manufacturing facility. The application of RACT to a particular plant must consider all the circumstances related to the control of VOC emissions from that plant.

We believe the sample regulation should set forth, and each State should consider, the following factors in determining the particular control levels, control techniques and capture efficiencies that constitute RACT for a particular facility:

1) The need for controls;

2) The cost effectiveness of the control technique or practice;

3) The capital expenditure necessary to achieve a certain capture efficiency;

4) The energy requirements of the control technique or practice;

5) The impact of required costs on affected parties;

6) The physical design and layout of the plant and equipment;

7) The other pollutants created by the use of the control technique or practice;

8) The impact of the control technique or practice on the ability of the plant to comply with product safety requirements;

9) The impact of the control technique or practice on the safety of the work environment.

We suggest that RACT and any applicable regulation implementing the requirements of RACT be established on a case-by-case basis with due consideration given to the factors listed above.

The regulation must allow each State sufficient leeway in determining whether implementation of a control technique is practicable and reasonable when viewed from the limitations imposed by plant space availability, compatibility with existing technological facilities, employee safety requirements and plant design constraints.

We commend the Agency's recognition of how difficult it is to draft a generic regulation for tire manufacturing. Such drafting difficulties are highlighted by the absence in the draft regulation of any consideration of reduced solvent usage as an acceptable means of reducing hydrocarbon emissions which is essentially the result when manual tread-end cementing is employed instead of the alternative automatic method.

Due to the unavoidable diversity prevalent in the tire manufacturing industry, a clear, illustrative definition of the factors to be considered by the States in establishing RACT should be set forth in the draft regulation. Anything more will limit the discretionary initiative of States to base their RACT determinations on such basic factors as discussed above.

Discussion (p. G-8)

No specific capture efficiency goal should be set in view of varying physical limitations. Because of limited technical data and correlations, it will not be possible to accurately specify a value.

Discussion (pp. G-10 - G-11)

The first paragraph should be deleted. Categorical compliance schedules are inappropriate in view of the varying characteristics of different facilities and the time that is required to assess the impact of process changes on product safety requirements.

We believe the EPA should give special consideration and attention to the impact of control techniques or practices on product safety and the safety of the work environment. The Agency should also bear in mind that the safety of pneumatic rubber tires is of paramount concern to not only the owner or operator of the tire manufacturing plant but to other regulatory agencies. Process changes can be made only after exhaustive testing.

Testing and Monitoring (Section XX.9550)

The testing and monitoring provisions should be deleted. The proposed provisions are inappropriate in view of the varying circumstances at various tire manufacturing facilities.

GENERAL PROVISIONS

Discussion (pp. L-2 - L-3)

The second sentence of the first paragraph of page L-2 of the draft sample regulation, "dsr", should be deleted in its entirety, or as an alternative, the regulation should expressly indicate that notwithstanding the Criteria for Approval of 1979 SIP Revisions memorandum (February 24, 1978), the information contained in the CTGs does not establish nor determine RACT.

Disposal of VOCs (Section XX.8020)

The provision (Section XX.8020) relating to the disposal of VOC, we submit, should be deleted, or in the alternative, the concentration of VOC and the size of the facility disposing of such VOC compounds or materials to which the regulatory prohibitions or limitations are applicable should be clearly set forth in the regulations.

Inspection, Maintenance and Operating Procedures (Section XX.8030)

The requirements of inspection, maintenance and operating procedures (Section XX.8030) are burdensome and will generate unnecessary paperwork and recordkeeping. The States would be in a better position to determine what inspections, maintenance and operating are necessary relative to the industry and control techniques involved. We suggest the section on inspection, maintenance and operating procedures be deleted.

Breakdown, Malfunction and Operation

The procedures for reporting and recording breakdowns, malfunctions and operation changes should be left to the discretion of each State in accordance with the Agency's "Workshop on Requirements for Non-attainment Area Plans" manual.

Monitoring, Recordkeeping, Reporting

Similarly, the provisions for monitoring, recordkeeping and reporting should be deleted from the sample regulation and left to discretion of each State (Section XX.8070).

Respectfully submitted,

F R Tully, Director
Governmental Environment, Safety
And Health Assurance Programs
The Goodyear Tire & Rubber Company
1144 East Market Street
Akron, Ohio 44316

TI/GIK
dsp

RMA

RUBBER MANUFACTURERS ASSOCIATION
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July 13, 1979

Mr. Tom Williams
Control Programs Development
Division, MD-15
United States Environmental
Protection Agency
Research Triangle Park, North Carolina 27711

Re: Review of Draft Sample Regulation

Dear Mr. Williams:

The Rubber Manufacturers Association (RMA) wishes to submit the enclosed comments on EPA's draft sample regulation for the control of emissions of volatile organic compounds from pneumatic rubber tire manufacturing.

The RMA and its member companies strongly urge the Agency to consider these comments before finalizing its guidance document.

Respectfully submitted,

Frank T. Ryan
Director, Environmental
Health & Safety Affairs

FTR:jlv
Enclosure

COMMENTS OF
THE RUBBER MANUFACTURERS ASSOCIATION
ON THE
ENVIRONMENTAL PROTECTION AGENCY'S
DRAFT SAMPLE REGULATION
FOR THE
CONTROL OF EMISSIONS OF VOLATILE ORGANIC COMPOUNDS
FROM THE MANUFACTURE OF PNEUMATIC RUBBER TIRES

July 13, 1979

The Rubber Manufacturers Association ("RMA"), on behalf of itself and its member companies, appreciates the opportunity to comment on the draft sample regulation for the control of emissions of volatile organic compounds ("VOC") from pneumatic rubber tire manufacturing. The RMA has the following general and specific comments on the draft sample regulation.

I. GENERAL COMMENT

The RMA strongly believes that the sample regulation must emphasize the authority and flexibility that each State has under the Clean Air Act to determine whether, and to what extent, control of hydrocarbon emissions is necessary at individual tire manufacturing facilities. The sample regulation should be a general guideline to which a State can refer during the development and drafting of its own regulations that reflect the particular circumstances of each tire manufacturing facility within that State.

The draft sample regulation fails to address either the proper purpose and use of the sample regulation or the interrelation of the sample regulation, the Control Technique Guideline for tire manufacturing ("the tire-making CTG"), and the requirements of the Clean Air Act. To provide such information, the sample regulation for tire manufacturing should contain the following introductory statement:

Section 172 of the Clean Air Act requires States to adopt reasonably available control measures, including reasonably available control technology ("RACT") for stationary sources. The States have until January 1980 to adopt RACT requirements for those tire manufacturing facilities located in areas that have not yet been able to attain compliance with the national primary and secondary ambient air quality standards.

The sample regulation for the control of VOC emissions from tire manufacturing is part of an EPA effort to aid States in determining whether, and to what extent, RACT requires controls at individual tire manufacturing facilities. RACT for nonattainment areas has been defined as the lowest emission limit that a particular source is capable of meeting by that application of control technology that is reasonably available considering technological and economic feasibility. RACT for a particular tire manufacturing facility is to be determined on a case-by-case basis, taking into account a variety of factors, including the technological and economic constraints that affect that facility.

EPA has also issued a Control Technique Guideline entitled "Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires", EPA-450/2-78-030 (December 1978). Notwithstanding the language contained in the Control Technique Guideline for tire manufacturing ("tire-making CTG"), the document does not establish RACT. The purpose of the document is to provide State and local air pollution control authorities with general information on the control techniques that can be used to control VOC emissions from various stages of tire manufacturing. This information addresses the general problems of the entire tire manufacturing industry and is intended to serve as a useful background document as the States begin to determine what control techniques constitute RACT at particular tire manufacturing facilities. EPA recommends that the tire-making CTG be viewed as an initial reference point which does not take into account the unique circumstances of each tire manufacturing facility.1/

1/ EPA has indicated its willingness to consider the tire-making CTG to be only an underlying basis for the development of individual State regulations appropriate for various tire manufacturing facilities. EPA has elaborated upon the function of CTGs in a draft statement entitled "Control Techniques Guidelines for Sources of Volatile Organic Compounds", a copy of which is attached as Appendix A to this comment.

> In EPA's words, the tire-making CTG and the sample regulation set forth a "presumptive norm" for RACT for tire manufacturing. This presumptive norm is, however, merely a suggestion of which control techniques might be appropriate RACT based on EPA's study of some of the problems general to the tire manufacturing industry. Neither the tire-making CTG nor the sample regulation establish or define RACT for the tire manufacturing industry. The application of RACT to a particular plant must reflect all the circumstances relevant to the control of VOC emissions from that plant, including the extent to which that area has reached attainment of the national ambient air quality standards.
>
> The legislative history of the Clean Air Act makes it clear that RACT cannot be established on an industry-wide basis but must be based on the individual characteristics and requirements of each tire manufacturing facility. In order to properly determine what level or type of control constitutes RACT at a tire manufacturing facility, a State must identify and take into account the various factors affecting that facility and then revise or reject the techniques discussed in the tire-making CTG accordingly. The sample regulation should aid the States in either adapting the CTG to particular facilities or developing other, more appropriate control strategies.
>
> So long as a State adopts RACT for tire manufacturing facilities in nonattainment areas, the failure of the State to follow the "presumptive norm" set forth in the tire-making CTG and the sample regulation will not affect the acceptability of the State's regulations. EPA's review of these regulations seeks to determine whether or not the State's regulatory scheme provides for the attainment and maintenance of the national ambient air quality standards. EPA will not infringe on the discretion of the States to determine what constitutes RACT so long as the States provide for the attainment and maintenance of the national standards by July 1982.

Unless the sample regulation contains the foregoing statement explaining its purpose and function, the States may be unaware of their ability and authority to revise the information in the tire-making CTG and the sample regulation to suit each tire manufacturing facility within a State. The States must be fully informed of their abilty to make individual determinations on the types and levels of control that constitute RACT.

II. COMMENTS ON SPECIFIC SECTIONS OF THE DRAFT REGULATION

A. The Scope of the Sample Regulation (§§ XX.9510, XX.9520)

1. Text of the Regulation (pp. G-2 - G-3)

The draft sample regulation, like the tire-making CTG, is applicable to "pneumatic rubber tire manufacture", which is defined as:

> the production of passenger car tires, light and medium truck tires, and other tires manufactured on assembly lines using automated equipment. (Draft Sample Regulation, p. G-2.)

This definition, together with the draft regulation on "Applicability", establishes the broad scope of the draft sample regulation. The draft regulation thus repeats the error made in the tire-making CTG of failing to recognize and make allowance for differences in the production of various types and sizes of tires.

The scope of the sample regulation should be restricted to the manufacture of pneumatic rubber, passenger-type tires. Hence, the definition of "pneumatic rubber tire manufacture" in the draft sample regulation should be replaced by the following definition:

> "Manufacture of pneumatic rubber, passenger-type tires" means the production of pneumatic rubber, passenger-type tires on a mass production basis. Generally, "passenger-type" tires include bead diameters through 16.5 inches and cross-sections through 12.8 inches. Actual dimensions of this category may vary within the industry. Most agricultural, mobile home, and light truck tires in this size range are included. However, where a plant produces speciality tires for antique or other vehicles, or other tires on an irregular basis or with short production runs, such production does not fall within the scope of this definition even where some mass production equipment is used during the manufacturing process.

The title of the sample regulation and all other references to "pneumatic rubber tire manufacture" should be changed to "manufacture of pneumatic rubber, passenger-type tires".

2. Discussion (pp. G-3 - G-5)

The discussion sections of the draft sample regulation often refer to the tire-making CTG in a manner that contradicts its actual role as a background document containing information to which the States can refer. Other portions of the draft sample regulation similarly fail to reflect the flexibility that the States have in determining whether, and to what extent, control techniques constitute RACT. These statements in the draft sample regulation must either be revised or deleted. The "Discussion" on pp. G-3 - G-5 of the draft regulation should be revised as follows:

(a) The first sentence of paragraph 1 of the Discussion on p. G-3 states: "The CTG document defines RACT controls for pneumatic tire manufacturing that are applicable to four specific operations in the overall process." Since the Clean Air Act requires that RACT be determined on a case-by-case basis, the tire-making CTG can only suggest and not define those control techniques which could be considered RACT for tire manufacturing. This sentence should be revised to read: "The tire-making CTG discusses control techniques for the manufacture of pneumatic rubber, passenger-type tires which, depending on particular circumstances, may be appropriate RACT controls for four specific operations in the overall process".

(b) The fourth sentence of paragraph 2 of the Discussion on p. G-3 states: "The applicable RACT controls are carbon adsorption, which is already in place in at least one facility, and incineration, which has been used in other rubber industries on gas streams with similar types and concentrations of VOC." This sentence should be revised to read: "The control techniques discussed in the tire-making CTG which could constitute RACT at certain tire manufacturing facilities are carbon adsorption and incineration".

(c) The third sentence of paragraph 3 of the Discussion on p. G-3 makes a statement comparable to that made in the fourth sentence of paragraph 2. This sentence should be revised as follows:

> The control techniques discussed in the tire-making CTG which could constitute RACT at certain tire manufacturing facilities are carbon adsorption and incineration. The tire-making CTG fails, however, to address certain negative aspects of incineration. Specifically, the tire-making CTG fails to take into account the energy used in incineration and the fact that the quantity of pollutants created by incineration can exceed the quantity of pollutants controlled at this operation.

(d) The fourth sentence of paragraph 4 of the Discussion on p. G-3 also makes a comparable statement to that contained in the fourth sentence of paragraph 2 and should be revised in the same manner as the third sentence of paragraph 3.

(e) The fourth sentence of paragraph 1 of the discussion on G-4 states: "The preferred RACT control technique is conversion to water-based sprays. Alternative RACT control methods include carbon adsorption and incineration." This sentence should be revised to read: "The control techniques discussed in the tire-making CTG which could constitute RACT at certain tire manufacturing facilities are conversion to water-based sprays, carbon adsorption and incineration. Given sufficient time to evaluate the impact of conversion on product safety, conversion to water-based spray may be the preferred control technique."

(f) Paragraph 1 of the Discussion on p. G-5 of the draft sample regulation states that the sample regulation is applicable to all plants that manufacture pneumatic rubber tires, "as defined in the CTG document". The second sentence of this paragraph should either be deleted or revised to read:

> Since the average plant produces 16,000 tires per day and emits an estimated 1,000 metric ton/year (1,100 ton/year), it is assumed that all plants which manufacture pneumatic rubber, passenger-type tires in nonattainment areas, as defined in the sample regulation, will be covered by the regulation. (changes underlined).

B. Provisions for Specific Processes (§ XX.9530)

1. Text of the Regulation (pp. G-6 - G-7)

The draft sample regulation contains provisions requiring the owner or operator of an undertread cementing, tread end cementing, or bead dipping operation to install and operate a capture system that achieves maximum reasonable capture, up to 85 percent by weight of VOC emitted. Such owners and operators are also required to install: (1) a carbon adsorption system that achieves at least a 95 percent removal of VOC emitted; or (2) an incineration system that oxidizes at least 90 percent of the nonmethane VOC; or (3) an alternative VOC emission reduction system that has at least a 95 percent reduction efficiency (§ XX.9530(a)).

The draft regulation also contains provisions that require the owner or operator of a green tire spraying operation to substitute water-based sprays for the normal solvent-based compound or to comply with capture and control requirements comparable to those required for undertread cementing, tread end cementing and bead dipping (§ XX.9530(b)).

The foregoing provisions on specific tire manufacturing processes must be deleted from the sample regulation. The inclusion of generic provisions in the sample regulation is inconsistent with the statutory mandate that RACT be determined on an individual, case-by-case basis. Due to substantial differences between tire manufacturing facilities (even within one company), it is not possible to develop a specific regulation that could be appropriately included in the sample regulation. For example, no one regulation could accomodate the differences in the ages of manufacturing facilities, the types of equipment, the methods of production and the physical layout of the plants.

While it is inappropriate for the sample regulation to prescribe particular control techniques, control levels and capture efficiencies, the sample regulation should set forth the factors that each State should consider in determining what techniques, levels and efficiencies constitute RACT for a particular facility. The factors to be considered by the States include the following:

(a) the capital expenditure necessary to achieve a certain capture efficiency;

(b) the impact of required costs on affected parties;

(c) the energy requirements of the control technique or control practice;

(d) the other pollutants created due to use of the control technique or control practice;

(e) the need for controls, including the relative severity of nonattainment with ambient air quality standards in the area;

(f) the impact of the control technique or control practice on the ability of the plant to comply with product safety requirements;

(g) the impact of the control technique or control practice on the safety of the work environment;

(h) the physical design and layout of the plant and the equipment; and

(i) the cost-effectiveness of the control technique or control practice.

The provisions of the draft sample regulation would allow the States no leeway to consider the factors necessary to a determination that application of a control technique is safe, cost-effective, physically feasible, technologically practicable, and environmentally justified. RACT and the regulations prescribing RACT must, of necessity, be determined on a case-by-case basis, so that RACT is established in light of the constraints present at each facility.

The difficulty of drafting a generic regulation for the various stages of tire manufacturing is evidenced by the first paragraph of the discussion on page G-8 of the draft sample regulation:

> There are several problems with requiring a minimum capture efficiency for undertread cementing, tread end cementing and bead dipping equipment and conveyors. The design and layout of the equipment varies considerably from plant to plant, operator accessibility must be provided to certain areas of the equipment, and it may not be practical to completely hood long conveyors. Therefore, a goal of 85 percent capture efficiency was set. This section requires the owner or operator of a source of VOC to make every reasonable effort to meet the 85 percent capture efficiency. The referenced documents generally give ranges which specific design parameters should fall within. If a capture system is not designed to achieve 85 percent capture, then the owner or operator should choose the value within the range which will result in a maximum capture efficiency, considering the physical limitations of the specific situation. EPA encourages comments on methods of assuring that maximum reasonable capture will be attained. (Emphasis added).

EPA here acknowledges the difficulty of establishing an across-the-board capture efficiency for tire manufacturing operations.

Any effort to specify control techniques, control levels, or capture efficiencies raises the problem of adjusting these specifications to the various operating constraints at each plant.

The difficulty of drafting an appropriate generic regulation is also illustrated by the failure of EPA's draft sample regulation to take into account reduced solvent usage as a means of reducing hydrocarbon emissions. Thus, this regulation would apply the same control levels to both manual and automatic tread end cementing despite the reduced solvent usage that results from manual as opposed to automatic tread end cementing. The fact that the tire-making CTG does not even discuss manual tread end cementing further emphasizes the need for States to develop their own regulations suited to the tire plants within each State.

In light of the diversity present in the tire manufacturing industry, the RMA maintains that the sample regulation should only identify various factors to be considered by the States in determining RACT. Any effort to draft generic regulations infringes on the discretion of the States to make their own determinations based on the information in the tire-making CTG and the factors in the sample regulation. Furthermore, a generic regulation drafted by EPA may be inconsistent or incompatible with the existing State regulations that affect tire manufacturing facilities.

2. Discussion (p. G-8)

The first paragraph of the Discussion on p. G-8 (which is set forth above) addresses the problems involved in requiring a minimum capture efficiency. The RMA agrees that the establishment of a minimum capture efficiency, like the establishment of minimum control levels, is unrealistic. As discussed previously, EPA's effort to write detailed generic standards for the tire manufacturing industry is inappropriate. Accordingly, the first paragraph of the Discussion on p. G-8 should be revised to read:

> There are several problems with requiring a minimum capture efficiency for undertread cementing, tread end cementing and bead dipping equipment and conveyors. The design and layout of the equipment varies considerably from plant to plant, operator accessibility must be provided to certain areas of the equipment, and it may not be practical to completely hood long conveyors. Therefore, no specific percent capture efficiency has been or can be set. The owner or operator of a VOC source is required, however, to make every reasonable effort to achieve a high capture efficiency. Because of limited technical data and correlation, it is not possible to specify the capture efficiency that will result from such efforts.

C. Compliance Schedule (§ XX.9540)

1. Text of the Regulation (pp. G-9 - G-10)

The draft sample regulation contains provisions establishing two different detailed compliance schedules for: (1) process equipment changes, low solvent technology and add-on control devices, including incineration with heat recovery; and (2) incineration without heat recovery and substitution of water-based spray in the green tire spraying operation. The first schedule requires compliance before January 1, 1982, and the second requires compliance by January 1, 1981. Both schedules specify four interim dates by which designated interim steps must be completed.

The RMA objects to the inclusion of detailed, industry-wide compliance schedules in the draft sample regulation. Since a determination of which controls constitute RACT at a particular facility must be made on a case-by-case basis, the establishment of a reasonable time for adoption and/or installation of such controls must also be made on an individual basis. Compliance schedules must reflect the specific difficulties each facility will encounter in the adoption or installation of RACT. The diverse physical layouts of tire manufacturing facilities preclude tire plants from adopting or installing RACT at a uniform rate.

The compliance schedules in the draft regulation also overlook another relatively unique aspect of the tire manufacturing industry -- the overriding need for product safety. The RMA particularly objects to the requirement that conversion to water-based sprays for green tire spraying be completed by January 1, 1981. The industry needs at least a two-year period in which to evaluate the impact of water-based substitution on product safety. Any change in the production process must be cautiously undertaken and critically examined.

In establishing individual compliance schedules for tire manufacturing facilities, the States will be able to set realistic schedules that reflect the problems confronting each tire plant. Individual schedules should be adjusted for those plants that have difficulty installing add-on control technology without adversely affecting the safety of the work environment. States may wish to make some allowance for companies with more than one tire plant in a State that find it difficult to simultaneously advance the adoption/installation of RACT at all plants.

The States have the flexibility and the authority to consider these and other concerns in the establishment of compliance schedules. EPA's effort to establish industry-wide compliance schedules infringes on the authority of the States. These compliance schedules should be deleted from the draft sample regulation.

2. Discussion (pp. G-10 - G-11)

The first paragraph of the discussion on p. G-10 of the draft sample regulation explains that the compliance schedules in the draft regulation are based on an EPA memorandum entitled "Categorical Compliance Schedule for VOC Sources". The memorandum suggests a two-year schedule for add-on control equipment and process changes requiring the purchase of equipment, except for incineration systems without heat recovery. A one-year schedule is recommended for installation of incineration systems, or process modifications not requiring the purchase of equipment.

This first paragraph should be deleted from the sample regulation. Suggested compliance schedules for all VOC sources cannot possibly reflect the diverse factors that will determine the reasonable compliance deadlines by which various tire manufacturing facilities can install or adopt RACT. The inappropriateness of such across-the-board compliance schedules is best illustrated by the failure to consider the additional time necessary to evaluate the product safety impact of process changes.

D. Testing and Monitoring (§ XX.9550)

1. Text of the Regulation (p. G-12)

The testing and monitoring provisions set forth in the draft regulation specify both the procedures for compliance testing and the control parameters to be monitored. The appropriateness of these suggested test procedures and the parameters to be controlled is dependent upon the particular control techniques used and the characteristics of the operation and plant at which the control technique is used. However, the draft regulation suggests that these procedures and control parameters are equally applicable to all tire manufacturing facilities.

As discussed previously, manufacturing equipment, production processes, and plant layouts vary greatly from one tire mnaufacturing facility to another. The types and levels of controls that constitute RACT will similarly vary from one facility to another. The necessity for and desired frequency and feasiblility of testing and monitoring will also differ from plant to plant. These diverse circumstances at individual tire manufacturing facilities render the application of uniform testing and monitoring requirements inappropriate on an industry-wide basis. Hence, the draft regulation is useless and can only be regarded as regulation for the sake of regulation. These provisions on testing and monitoring should be deleted from the draft sample regulation.

III. GENERAL PROVISIONS

A. Applicability (§ XX.8010)

1. Discussion (pp. L-2 - L-3)

The Discussion on pages L-2 and L-3 of the draft regulation addresses exclusions from control of VOC emissions, and the first paragraph of the Discussion refers to relevant regulatory philosophies set out in the memorandum of February 24, 1978, on "Criteria for Approval of 1979 SIP Revisions". The second sentence of that paragraph summarizes one philosophy as stating "that the regulation must reflect RACT as determined in the CTG for virtually all sized sources."

While this sentence may properly summarize one philosophy contained in that memorandum, the sentence misrepresents the manner in which RACT should be determined under the Clean Air Act. This sentence should either be deleted from the sample regulation, or the sample regulation should include a subsequent statement that, notwithstanding the memorandum referred to, the information set forth in CTGs does not establish or determine RACT.

B. Disposal of Volatile Organic Compounds (§ XX.8020)

1. Text of the Regulation (p. L-4)

This provision should be eliminated from the draft sample regulation. Prohibitions of or limitations on the disposal of volatile organic compounds or materials containing volatile organic compounds must take into account the size of the facility disposing such compounds and materials and the concentration of the volatile organic compound involved.

C. Inspection, Maintenance and Operating Procedures (§ XX.8030)

1. Text of the Regulation (p. L-5)

The section on inspection, maintenance and operating procedures should be eliminated from the sample regulation. The regulation will merely create an administrative burden and generate useless papers and records. The need for formalized inspection, maintenance and operating procedures must be determined by each State in light of the particular industry, company practices and control techniques involved. The accompanying discussion should also be deleted.

D. Breakdown, Malfunction and Operation Changes (§ XX.8040)

1. Text of the Regulation (p. L-7)

The provisions in the draft sample regulation that address breakdown, malfunction and operation changes should be eliminated. The necessity for and content of procedures for reporting and recording breakdowns, malfunctions and operation changes are within the discretion of each State. EPA has already provided the States with suggestions on how to deal with these situations in a manual entitled "Workshop on Requirements for Nonattainment Area Plans", and EPA should not imply that the States must adopt specific language on breakdowns, malfunctions, and operation changes. So long as a State provides for the attainment and maintenance of the national ambient air quality standards, the procedures used to deal with breakdowns or malfunctions in control equipment are within the discretion of the State.

2. Discussion (pp. L-8 - L-13)

Rather than drafting specific regulatory langauge on breakdown, malfunction and operation changes, EPA should confine itself to the presentation of alternative regulatory approaches. Of the three options reviewed on pages L-8 - L-13 of the Discussion, the source demonstration approach is preferable. This option would allow a source an opportunity to demonstrate that excess emissions resulted from an unavoidable breakdown.

E. Monitoring, Recordkeeping, Reporting (§ XX.8070)

1. Text of the Regulation (p. L-19)

The draft regulation on monitoring, recordkeeping, and reporting requirements should be eliminated from the sample regulation, since the establishment of such requirements is best handled on an individual basis by each State. The discussion following this draft regulation generally recognizes that these details are within the discretion of each State.

2. Discussion (pp. L-19 - L-20)

The discussion relating to control equipment monitors and monitoring requirements recognizes that each State must establish its own requirements on this subject. The establishment of record-keeping requirements is also within the discretion of each State, and the last paragraph of the discussion should be revised to reflect that fact.

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203-573-2000

July 13, 1979

Mr. Tom Williams
Control Programs Development Division, MD-15
Environmental Protection Agency
Research Triangle Park, NC 27711

Dear Mr. Williams:

This letter is in response to your undated memo entitled, "Review of a Guidance Document for the Group II Control Technique Guidelines for Volatile Organic Compounds" and attachments which include draft regulations for the control of VOC emissions from Tire Manufacturing. This material was received without a covering letter from GCA Corporation of Bedford, Massachusetts on June 19, 1979.

A comment has been prepared and is being submitted by the Rubber Manufacturers Association (RMA) which we endorse. We consider the RMA comments as our comment and for the sake of brevity will not repeat them. You should consider the RMA comment in the context of a summary of several individual commentors. However, we wish to add to this comment and emphasize certain additional points.

The tire-making CTG purports to set forth "a presumptive norm" for RACT for tire manufacturing. A dictionary definition of these terms would seem to imply that the CTG, RACT values, would apply to at least 50% of the plants being controlled. In my opinion, this is not the case and several technical issues involved were ignored in the development of the CTG. The Clean Air Act indicates that RACT is developed upon a plant basis. Therefore, any guidance to the States must clearly indicate that the CTG presumptive norm RACT is for a hypothetical "typical" plant of 16,000 tires/day representing a contrived model not indicative of real world conditions.

Section XX.9520 Applicability and Discussion, Page G-3. A fundamental flaw in the tire-making CTG and these prepared regulations is the lack of comprehension of industry process diversification. This is supposedly guidance to the States, yet no indication is made of the fact that all plants may not employ the process steps discussed. For instance, we do not employ the "Bead Dipping" process operation.

Section XX.9530 Provisions for Specific Processes, Page G-6. This should be deleted entirely as discussed in the RMA comment. It also is not consistent within itself or the CTG. Section (a) (1) "...a capture system,...up to 85 percent"; (b) (2) (i)" ...capture and transfer at least 90 percent. "The CTG in Table 1-1, Page 1-4 gives capture efficiencies of 65-85% and 80-90%; and as a footnote to this table "Percent capture efficiency for a retrofit will vary depending on the design and layout of the individual affected facility; minimum acceptable percent capture should be determined on an individual plant basis." A sample regulation that describes specific capture efficiencies is appropriate.

Section XX.9400 Compliance Schedule, Page G-9. The dates and time tables are unrealistic and do not reflect reality. Suppliers could not supply the equipment necessary to comply with these dates. Insufficient time is made available for Managements approval of the funds necessary to implement these regulations, (using the most cost effective control measure listed in the CTG, capital requirements for a 16,000 T/D plant is $937,000).

Section XX.8030 Inspection, Maintenance and Operating Procedures, Page L-5. This section is regulatory overkill and should be eliminated. The control equipment being contemplated is not high technology hardware requiring this type of monitoring. The administrative burden is unnecessary upon the control agency and controlled facility. I question the right of the Agency to establish work practices and job classifications by specifying the functions of "trained operators".

Section XX.8040 Breakdown, Malfunction and Operation Changes, Page L-7. This section is unrealistic in light of normal operating procedures in a manufacturing facility. Recording of malfunctions should be required only when duration exceeds 4 hours and reporting only when duration is in excess of 8 hours. Two-year record retention should be adequate to show that the operator has been in compliance.

Sincerely yours,

Robert C. Niles

Robert C. Niles
Director
Environmental Control

RCN/rmb
Attachments

GRAPHIC ARTS

CrownZellerbach
Environmental Services

July 2, 1979

Mr. Tom Williams
Control Programs Development Division
U.S. Environmental Protection Agency
Office of Air Quality Planning & Standards
Research Triangle Park, North Carolina 27711

Dear Mr. Williams:

We have recently received a copy of the draft guidance document on VOC controls for the Graphic Arts Industry. The Flexible Packaging Association has submitted comments on the document which include our comments.

However, since we are the only company which has installed carbon adsorption systems to control water soluble VOC from flexographic presses, we want to emphasize our concerns on proposed requirements.

The guidance documents suggests that the overall capture efficiency should be 60% and an emission control system efficiency of 95%. This latter requirement could prevent installation of carbon adsorption systems for water soluble solvents. Unless the steam regeneration cycle can be minimized, excess water will be mixed with solvent to prevent reasonable disposal.

The alcohol-water mixture can be used as fuel if the solvent concentration can be maintained above 50 wt. %. Alternately, a simplified solvent mixture may be separated by azeotropic distillation. Additional water would complicate such attempts at either recovery or use of the solvent as boiler fuel.

[illegible] St Camas WA 98607 Tel (206) 834-4444

The alcohols and other water soluble solvents are more difficult to remove with carbon adsorption. Replacement of these solvents by water insoluble solvents (which are generally more reactive and toxic) is not compatible with the flexographic equipment, the substrate (film) or the inks used on polyolefin printing.

The primary purpose of the regulation is to reduce VOC emissions. The overall emission reduction efficiency is sufficient to specify control. Additional rules on how to achieve this reduction should be left to the operator. It may be more cost and energy effective to improve fugitive emission control to achieve the goal.

Please call if you wish to discuss this problem or any other aspects of the regulation.

Very truly yours,

James E Walther

JAMES E. WALTHER/jd

Supervisor,
Air & Noise Programs

cc:
Dr. H. R. Amberg - ESD

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July 13, 1979

Mr. Tom Williams
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Research Triangle Park, North Carolina 27711

Dear Mr. Williams:

We are pleased to submit herewith our comments on Part I, Part III and Section XX.9600 Graphic Arts Systems of the draft document for the Group II Control Technique Guidelines for Volatile Organic Compounds.

We appreciate the opportunity afforded us to comment on this guideline document. Attached herewith is your copy of the draft in which our editorial suggestions and comments have been inserted within the context in red markings for ease of distinction. In addition, our more serious comments with respect to the applicability of the draft document in the printing industry are covered in the further discussions which follow.

SECTION XX.9610

We find the Definitions at Section XX.9610 (b) somewhat misleading inasmuch as those numbered (1), (2) and (3) do not distinguish the method and kind of printing — from other printing methods — as apparently intended. The following definitions are proposed:

(1) "Printing means the reproduction of graphic images — including text, patterns, designs or pictures — on a substrate by a serial process in which fluid ink applied to one or more plate or image carriers is transferred to a receiving substrate by impression contact.

(2) "Rotogravure Printing" means the process of printing from an intaglio or recessed image plate cylinder using very fluid inks.

(3) "Flexographic Printing" means the process of printing from a flexible relief or raised image plate, made of rubber or other elastomeric material, using very fluid inks.

(4) Same as (1) as listed in the draft document.

(5) Same as (2) as listed in the draft document.

With the above changes, definitions numbered (3),(4) and (5) in the draft document can and should be deleted.

SECTION XX.9620

In regard to the discussion following Section XX.9620 we take exception in particular to the last statement, "It should be assumed that all of the solvent comsumed evaporates into the atmosphere." Quite the contrary, "It should not, however, be assumed that all of the solvent evaporates into the atmosphere". It is our contention that neither that portion of the ink solvent that is retained in the printed product nor the waste or dirty inks and cleaning solvents which are removed from the operation and disposed of in accordance with applicable regulations should be included in determining the potential or overall emissions.

SECTION XX.9630

Some of the proposed regulatory Provisions for Specific Processes under Section XX.9630 apparently were either misprinted or mistranscribed from Volume VIII, EPA-450/2-78-033, of the CTG Series. Specifically part (3) (i) and(3)(iii) should, instead of 95.0 percent, reflect 90.0 percent control device efficiency as stated in paragraphs one and two in EPA-450/2-78-033 at 3.4.1 on page 3-9.

SECTION XX.9650

With regard to Section XX.9650 "Testing and Monitoring" we vigorously object to paragraphs (C) (1) and (C) (2) as written. We very much appreciate the desirability of specifying test methods for certifying compliance and welcome a source specific procedure which would apply equally throughout the industry. At this time, however, we strongly urge that part (C) be limited to the following: "(C) (1) Test procedures to determine compliance with Section XX.9630 must be approved by the Director". This proposal is based on the following reasons:

Inclusion of EPA 450/2-78-041 as a requirement for determining compliance with Section XX.9630 is technically invalid. The test methods in EPA 450/2/-78-041 are only of very limited applicability and are based on the measurements of the mass carbon concentration, whereas, in contrast Section XX.9630 specifies emission reductions in terms of the mass of organic solvent.

The discussion sections which follow Section XX.9650 far oversimplify the ease of converting organic carbon to mass rate of emissions by virtue of invalid assumptions and casual reference to additional — undisclosed — test methods. Moreover, U.S. EPA itself, in its program pursuant to the development of New Source Performance Standards for the publication rotogravure industry, chose not to use the "reference method" in their site testing program and in their attemps to employ variations of the "alternate method", at considerable expense, have experienced dubious results.

This discussion is not meant to condemn the contributions to the state of the art disclosed in EPA-450/2-75-041; these deserve recognition, but necessarily must be kept within the realm of their practical application. Such perspective is contained in EPA-450/2-78-041 which states:

> The reference method "is recognized as leading the technology" and "The Emission Measurement Branch of OAQPS is working to refine the operating details of the procedure;...."
>
> The alternate method "does not and is not intended to indicate specific applications where the method can (or cannot) be used or correction factors to be applied to the results", and
>
> "In addition to the limitations associated with the alternate methods screening methods may also lack precision".

It has been our understanding, from participation in printing industry association meetins with OAQPS personnel at Research Triangle Park, that source specific applications of test methods would not be specified until such test procedures had been tried and verified by EMB.

Based on these arguments, it would seem very inappropriate to issue guidelines for state implementation plans that specify the test methods described in EPA-450/2-78-041 as required procedures applicable either to flexographic or rotogravure printing operations.

The discussion section under Section XX.9650 requests comments regarding "average rate of ink usage". In printing practice the average rate of ink usage is a variable parameter that is the result of press operations over a given interval of time. Any rate of ink usage valve is only valid for the time period which it represents because of continual variations and changes in the materials and product, such as ink coverage variations in accordance with changes and trends in the copy to be printed, changes in the substrate and products being printed, raw material variations particularily from one manufacturing source to another, etc. Consequently, average rate of ink usage is a historical valve which is prone to fluctuate upward or downward even over extended periods of time.

SECTION XX.8030, SECTION XX.8040 And SECTION XX.8070

Individually and collectively these three proposed regulations are extremely presumptive, represent excessive administrative burdens and are indeed unreasonable. While the intent of these regulations is clear their incorporation in the SIP would incur significant costs and place a voluminous administrative load on operators and agencies alike that ought to be reserved for application to those sources and facilities which are found to be negligant and recalcitrant. Additionally, these are the kind of regulations which in practice end up being adheared to very tightly in one district and very loosely in another simply because of the amount and level of administrative resources available. Briefly, the more outstanding objections to these three sections of the proposed regulations are as follows:

- Treatment of very complex subject matter in a simplistic fashion,
- Idealization of practical problems in a textbook manner,
- Presume well ordained problem analyses and resolutions before their occurrence,
- Would create inordinate and unjustifiable administrative burdens on both operators and state agencies and a potential avalanche of tutorial interactions, and,
- Would be extravagant, cumbersome and unproductive except in extraordinary circumstances.

It is recommended that these three sections of Part III should either be extensively revised to reflect their intent and purpose in a more general and more reasonable way or deleted from the document entirely.

We trust that these comments will be meaningful to you and again wish to express our pleasure in having the opportunity to comment on this draft guideline document. Should you have any questions concerning these comments, please feel free to contact the undersigned. I will appreciate being included on the mailing of any further drafts and in particular I would appreciate copy of the final document when it is issued.

Sincerely,

Dayton Press Inc.

R. D. Fremgen

Robert D. Fremgen, Manager
Chemical & Environmental Engineer

RDF/tr

Attachment: Edited Copy Of Part I
General Definitions & Section XX.9600
Graphic Art Systems And Part III
General Provisions

July 3, 1979

Mr. Thomas Williams
Project Officer
Control Programs Development Division
Office of Air Quality Planning and Standards
United States Environmental Protection Agency
Research Triangle Park, North Carolina 27711

Dear Mr. Williams:

Re: Guidance Document for State VOC Regulations Graphic Arts Industry

I would like to accept your opportunity to comment on this document. Comments are as follows:

XX. 8060 Petition for Alternative Controls

I would hope that this procedure would not become mired down in time consuming paperwork that would discourage the attempted application of new technology or have even more far-reaching effects that would discourage the development of new technology. Such a procedure should be streamlined to every extent possible for all industries, not only the graphic arts industry.

XX. 9620 Applicability

The last sentence on Page H-4 under the Discussion heading is objectionable. Although it does not appear explicitly in the CTG Document, part of the reason the industry argued for 70-75% overall efficiency for publication gravure operations and 60-65% overall efficiency for packaging gravure operations (as appeared in the early CTG drafts, later changed to 75% and 65% respectively) is the industry belief that as much as or more than 5% of the VOC in the press-ready ink remains on the printed copy. No test has yet been devised that will support this belief, but material balance figures should show a higher overall efficiency for plants with control systems were some VOC's not remaining with the printed copy. Therefore it should not be assumed that all of the solvent consumed evaporates into the atmosphere.

XX. 9630 Provisions for Specific Processes

Section (3) subsection (i) reads "A carbon adsorption system which reduces the volatile organic emissions from the capture system by at least 95.0 percent by weight; "Section 1.2.1 entitled "Available Add-On Control Devices" of the CTG document for the graphic arts industry very clearly specifies 90% or greater control device efficiency..."can and should be achieved."

DIVERSIFIED PRINTING CORPORATION, LOWER VALLEY ROAD—ROUTE 372, P. O. BOX D, ATGLEN, PENNSYLVANIA 19310, AREA CODE 215-593-5173

Since the Guidance Document should be consistant with the CTG document, the 90% figure should be used.

Section (3) subsection (iii) would require all alternative control methods to achieve at least 95% VOC reduction efficiency. My objection here is similar to that for the earlier discussion of alternative controls. If the requirements for alternative controls are too stringent, development of potential alternative controls might be hampered. Thus the requirement for VOC reduction utilizing alternative controls should be 85% rather than 95%.

Sections XX. 9620, XX. 9630, XX. 9640

"Printing Rotogravure should read Publication rotogravure." (Pages H-3, H-5, H-6, H-8, and H-9.)

The opportunity to comment is appreciated. I trust the comments will be well received.

Sincerely,

Warren J. Weaver

/vlm

cc: H. George GRI
C. R. Salisbury
B. Neal
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June 29, 1979

Mr. Tom Williams
Control Programs Development
  Division, MD-15
Environmental Protection Agency
Research Triangle Park,
  North Carolina 22711

Dear Mr. Williams:

These comments on the draft Guidance Document for the Group II Control Technique Guidelines for Volatile Organic Compounds are submitted on behalf of Envelope Manufacturers Assocation, the national association of manufacturers of commercial envelopes. We appreciate the invitation to review the document and offer comments for consideration, and we particularly applaud the intention to publish all industry comments as received.

By way of background, according to the Preliminary Report of the 1977 Census of Manufactures, there were 267 establishments in the United States primarily engaged in the manufacture of commercial envelopes, of which 176 employed 20 or more persons. Members of Envelope Manufacturers Association operate 170 of these 267 establishments and produce more than 80 per cent of the approximately 100 billion envelopes produced annually. A substantial number of these envelopes are sold "plain," to be printed by others. Such printing as is performed by envelope manufacturers represents a secondary process, which is the reason the industry is classified as SIC 2642 - within the Paper classification, rather than Printing. While flexography is the predominant printing process used by envelope manufacturers, this application represents only a tiny portion of all flexographic printing.

Our reaction to the Guidance Document is the same as it was to the Control Technique Guideline (CTG) document for flexographic printing in the graphic arts industry. We do not believe it should be applicable to envelope manufacturers, because the control technique employed is not appropriate for printing equipment used by envelope manufacturers.

We do not request a "per se" blanket exemption for envelope manufacturers. We do suggest that the parameters or definitions determining applicability be re-examined and more carefully stated. It is natural that in approaching this project an examination was made of control techniques being employed in "typical" flexographic printing operations. It is dangerous, however, to apply these findings to all flexographic printing operations without an examination of whether significant differences within flexography affect the technological or economic feasibility of employing these control techniques.

Knowledgeable persons have advised us that envelope manufacturers need not be concerned, because of the proposed exclusion from applicability of facilities whose potential emissions of volatile organic compounds are less than 100 ton/year. The great majority of envelope manufacturing establishments have a potential emission of much less than 50 ton/year. We remain concerned, however, for two reasons. The maximum potential emission may be slightly in excess of 100 ton/year, and there are a small number of facilities - no more than four or five - whose potential emission may approach this level. It would be patently unfair to subject such a small part of an industry to a demand for the installation of costly control equipment or to have the threat of such a demand act as a barrier to growth. Also, we are mindful that individual State and local agencies may adopt regulations with coverage extended to facilities with potential emissions below 100 ton/year.

For these reasons, we respectfully ask that you consider the following distinguishing characteristics of flexographic printing equipment used by envelope manufacturers. The figures cited are based upon the responses from 57 member establishments who were able to reply to a survey within the brief period before these comments were requested.

Only 20% of flexographic printing is performed on separate printing presses; 80% is performed in-line on components of a folding machine used to convert paper into envelopes. Only 13% of flexographic printing is performed on folding machines with web feed; 87% falls into the category of sheet-fed equipment - either in-line or off-line. Because of this, and because of the typically limited ink coverage required, the potential emission per printing unit is commonly less than 1 ton/year.

There is also a structural distinction that should be considered. Flexographic printing units used by envelope manufacturers do not utilize drying units, which affects the feasibility and expense of add-on collection and treatment systems.

Because of these factors, the "Cost-effectiveness of pollutant controlled" determined for "model" plants in the CTG is not at all representative of the situation for envelope manufacturing plants. While add-on control may be "generally available technology" for the types of flexographic printing examined, or even for the great majority of flexographic printing operations, its suitability for the particular type of operation used by envelope manufacturers is at the least highly suspect.

The guidelines document mentions high solids technology, described as primarily experimental at this time, and the use of water-borne ink as alternative methods of limiting VOC emissions from flexographic printing operations. Although such water-borne inks are being used by some envelope manufacturers for limited applications, their universal use so as to satisfy the requirements of the guidelines is not feasible at the current time.

Provision is also made for petitions for alternative controls, but in the case of envelope manufacurers, there would appear to be no generally available controls that would achieve the required change in aggregate emissions from the facility.

In light of the above, we submit that it is not proper to apply the guidance document to all flexographic printing operations, regardless of type, or to advise State and local agencies, directly or indirectly, that such universal application is proper.

While recognizing that the aggregate VOC emission from a facility is of primary concern, the cost-effectiveness of pollutant controlled will depend upon the number of sources producing the emission. The cost of a given aggregate reduction of emissions will be substantially greater for a facility with seven sources, each with a potential emission of 1 ton/year, than for a facility with a single source with a potential emission of 7 ton/year.

We strongly believe that it is encumbent upon the Control Programs Development Division to address the issues we raise in the final Guidance Document. It would be highly inefficient to leave these issues to be addressed during each State's public hearing period.

We also offer comments on the following two additional areas.

We presume that a facility whose potential emissions of volatile organic compounds exceeds 100 ton/year may be brought into compliance with the proposed regulation by taking steps, such as a change to inks with a lower percentage organic solvent, that will reduce the potential emissions below 100 ton/year. Perhaps a petition for alternative controls, stating this action, would be required. In any event, we believe the guidance document should explicitly state the acceptability of this approach.

Our final comment deals with the measurement of potential emissions. The discussion on page H-4 covers calculations based on actual "consumption" of solvent and ink, but consumption is not explicitly defined. We believe the document should make clear that waste solvent and ink that is collected in drums and properly disposed of should not be included in the measurement of potential emissions. The disposal of volatile organic compounds is addressed in the document (page L-4), but not in relation to the measurement of potential emissions.

Very truly yours,

William R. O'Neill
Secretary

WRO'N:job

FPA
Flexible Packaging Association

12025 Shaker Boulevard
Cleveland, Ohio 44120
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THOMAS J. DUNN, JR.
Technical Director

June 26, 1979

Mr. Tom Williams
US-EPA
Office of Air Quality Planning & Standards
Research Triangle Park, NC 27711

Dear Mr. Williams:

The Flexible Packaging Association is pleased to submit these comments on the Guidance Document for the Group II CTG's for VOC. Our industry, through the efforts of individual member companies and FPA task forces, has been very much involved in the development of these VOC emission control guidelines. We plan to continue to cooperate with US-EPA and the states in the efficient and economic implementation of the Clean Air Act.

Our primary concern at present is the time available for the development and commercialization of low solvent inks, coatings, and adhesives. We are actively planning an Association effort to support and enhance the "forcing" of future technological breakthroughs in these areas. Our involvement, of course, will be directed by the guidelines of the Federal Trade Commission and Justice Department so as to avoid any possible activities in restraint of trade. Our intent is to do everything legally possible to encourage and enhance the efforts of companies within the industry to comply with the Clean Air Act. I will submit to you in the near future a more detailed description of our program in this regard.

We are pleased that the information developed by the WAPORA survey of our industry, in which the Flexible Packaging Association actively participated, has prompted you to suggest a 100 ton per year small source exemption. As you know, the costs of compliance will be quite high for our industry. Given the limited financial resources and profit potential of smaller flexible packaging converters, this exemption is most helpful.

However, we note that much of our industry is customized-product oriented. Both large and small converters tend to have relatively short runs for many different packages and customers. In fact, the same WAPORA survey found that about one-third of scheduled production hours in the industry are devoted to machine set-up and clean-up operations. This characteristic of the industry results in a healthy competitive situation between both small and large converters. The small source exemption would upset this balance. As an equitable compromise, we suggest a 100 ton per year exemption per facility regardless of size. This provides administrative efficiency for the regulator, economic relief for the small converter, fairness to the large converter, and no significant increase in emissions.

Additional detailed comments are attached. These reflect input from many Association members, both converters and suppliers. We look forward to continued cooperation with your office and extend our willingness to assist your work in any way we can.

Sincerely,

Thomas J. Dunn
Technical Director

TJD/ac

Enc.

cc: R. A. Lillquist
Malcolm MacArthur
FPA Environmental Task Force

DETAILED COMMENTS OF THE FLEXIBLE PACKAGING ASSOCIATION

on

CONTROL GUIDANCE DOCUMENT GROUP II CONTROL TECHNIQUES GUIDELINES VOLATILE ORGANIC COMPOUNDS

Page A-4
Definition of Volatile Organic Compound

We assume this definition will be amended to reflect the recent US-EPA policy on methyl chloroform and methylene chloride (44 FR 32042). Even if subsequent regulations under other provisions of the Clean Air Act are likely, the deletion of these compounds from SIP provisions will help reduce confusion and overlapping regulatory requirements.

Page H-2
Definition of Packaging Rotogravure Printing (xx.9610 (b)(1))

In order to avoid confusion, add "rotogravure" to line 1 between "means" and "printing", and change "and" in the second last line to "or".

Definition of Publication Rotogravure Printing (xx.9610 (b)(2))

As above, add "rotogravure" between "means" and "printing" in line 1, and change "other types of printed materials" to "other nonpackaging printed materials" in the last two lines.

Definition of Flexographic Printing (xx.9610 (b)(3))

Correct spelling of "elastomeric" in last line.

Page H-3
Small Source Exemptions (xx.9620 (b))

See comments in cover letter.

Page H-5
Provisions for Specific Processes (xx.9630)

The intent regarding applicability of these regulations to coatings and adhesives (Discussion, page H-7) is nowhere embodied in the suggested regulatory language. This can be accomplished by referring to "inks, coatings, and adhesives" in this section where "ink" is now specified.

The wording of paragraph (1), water-based, and paragraph (2), high-solids, should be parallel. In addition, other low-solvent formulations may be developed which, although not meeting these definitions, do in fact provide equal or greater emissions reductions. Provisions should be made for such materials, either by specific sections as suggested by suppliers, or an "equivalency" section allowing certification of such materials upon submittal of necessary documentation by suppliers or converters.

Paragraph (3) would establish a double standard of emission control technology at the expense of carbon absorption system operators. While CA systems can be operated at 95% efficiency or more, this is achieved by more frequent stripping of the columns. In package printing, the varied and sometimes water-miscible solvents used preclude solvent recovery, given present and forseeable technology. If a 95% efficiency is required, the one useful application of the water-solvent mix, as a combustible boiler fuel, is precluded. More importantly, the resultant dilute water/solvent mixture becomes a "hazardous waste" which presents a significant disposal and environmental problem of its own. We suggest either equalization of control efficiencies for all technologies at 90% or below or elimination of this paragraph in deference to Subsection (b), regarding overall efficiency.

The intent of Subsection (b) is clouded by the reference to its provisions in the Discussion (page H-6) as "target reduction efficiencies." Either these reductions "shall be required" (line 9) or some other wording is appropriate. Clarification is in order. Also, we know of no standard method for calculating "capture efficiency" and hence "overall emission reduction efficiency." We do know of considerable controversy and uncertainty in this area, and fear industry may be faced with a requirement which either cannot be achieved or cannot be verified if achieved.

Page H-6
Discussion on Specific Processes

These comments do not reflect the developmental nature of much of the low solvent technology envisioned by the regulatory language. This should be recognized in the compliance schedules as suggested below.

In addition, the outlook for suitable low-solvent replacements for some high-performance inks, coatings and adhesives is not favorable. Years were required, for example, to obtain Food & Drug Administration approval of the adhesive systems in the retortable pouch. Provisions should be made upon submittal of suitable information from suppliers or converters for exemption of various high-performance systems that cannot be replaced. ✓

Also, these comments do not reflect the economic impact of these add-on controls to companies in the industry. We are not convinced of the "economic feasibility" of these controls in general. As a means of assessing this, we suggest that the state regulatory agencies ascertain for each facility whether or not the installed cost of the add-on equipment is more than the current value of the process equipment emitting the VOC and/or whether or not the added operation and depreciation costs increase product costs by more than 5%. If either situation is found to be the case, the state would have to make an affirmative certification as to the necessity of add-on control equipment.

Pages H-8 & H-9
Compliance Schedules (xx.9460)

The suggested compliance schedules are unrealistic for both add-on controls and low-solvent technology. Paragraphs (1) and (2) specify 6 months and 2½ months respectively for initiation of construction following contract award or purchase order issuance. At present, member companies have been given delivery periods ranging from 6 to 10 months after preliminary engineering has been done. This period can only increase as the demand for these controls increases. For those companies choosing the add-on control option, we suggest an initial plan be submitted to the state with appropriate milestones within six months of state adoption of the regulations. This plan would then serve as the relevant compliance schedule. We also suggest final compliance be reflective of the time required for companies choosing the low solvent option to comply with those provisions.

Regarding the low solvent option, we note a 9/18/78 US-EPA interoffice memo of John Rasnic, Chief of the Compliance Monitoring Branch, to John Calcagni, Control Program Operations Branch: "For example, five years would not be an unreasonable length of time to research, develop and evaluate a low-solvent coating for a particular application. Time would also be required to install the system."

As discussed in the cover letter, FPA will be working to help implement such new systems. At the present time, we feel progress will be apparent within the time frame envisioned in these regulations, but it will be less than 100% applicable. We will be in contact with your office as we develop possible scenarios for low solvent systems. We hope to develop the case for a phased reduction based on realistic and dedicated efforts to develop and commercialize these new systems.

Should you not modify these provisions based on the above suggestions, we do recommend guidance as to the extent of "final plans" in subparagraphs (a)(1)(i) and (a)(2)(i). We also see no utility in requiring demonstration of compliance in the middle of winter for most of the country. If the general deadlines cannot be changed, we suggest at least modification of the January 1 dates to June 1.

Page H-11
Testing and Monitoring (xx.9650)

Paragraph xx.9650 (c)(2) apparently calls for proprietary information from the suppliers of inks, coatings and adhesives. At a maximum, state agencies need only the volume and weight percents of both the nonvolatile and water fractions and the identity and relative amounts of VOC solvents.

Continuous monitoring of "breakthrough" is not an appropriate provision. If reference here is to the definition of breakthrough in the General Definitions, the intent seems to be to detect an exhaust clearly in excess of allowed limits. This is not a continuously monitorable parameter, but rather a discrete occurrence. Continuous monitoring for relative VOC concentrations in the outlet of the CA unit would seem to be more appropriate.

Page L-7
Breakdown, Malfunction, and Operation Changes (xx.8040)

These provisions seem unnecessarily involved and strict. We see no reason why VOC emission controls breakdown, malfunction, or changes should be treated differently than controls for other pollutants and are quite aware of provisions for these occurrences in existing state regulations. We recommend omission of this section.

Page L-15
Petition for Alternative Controls (xx.8060)

We strongly endorse the inclusion of this section. It offers the only feasible means of economic compliance for much of this industry.

We recommend that the date for submission of a petition under these provisions be changed to six months following the adoption of the regulations by the state.

We also note that VOC emissions effects are not confined to a single plant site. Under the alternative controls option, it would seem feasible to allow consideration of commonly-owned facilities in the same general area (an AQCR possibly) to be considered in one petition. Adding a definition of the permissible area of common consideration and reference to "location(s)" and facility(ies) would make this possible.

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June 21, 1979

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Mr. Tom Williams
Control Programs Development
Division, MD-15
Environmental Protection Agency
Research Triangle Park, N.C. 27711

Dear Mr. Williams:

This is in response to your request for comment on the Guidelines Document Group II Control Technique Guidelines for Volatile Organic Compounds XX.9600 Graphics Arts Systems.

The Flexographic Technical Association is comprised of over 700 Flexographic printers and suppliers of printing equipment and materials. It's purpose is to benefit the flexographic printing industry by education and legal interchange of information. FTA supports the objectives of the Environmental Protection Agency. We consider it our obligation to assist by providing information relative to flexographic printing technology. Our suggestions are intended to achieve emission control and at the same time be as amenable as possible to industry. The following comments relate to sections as indicated:

Page H-5 XX.9630 (a) We recommend that the high solids specifications be modified to allow equivalent emissions such as would be achieved by dilution of the 60% non volatile composition with water. The following phraseology might be used:

(2) "The facility prints with an ink containing no less than 60% by volume non volatile less water."

RECTOR.

HOWARD K. SHELDON
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AFFILIATED WITH EUROPEAN FLEXOGRAPHIC TECHNICAL ASSOCIATION

Page H-6 The discussion of high solids coatings might read:

> "The second method is high solids technology which is primarily experimental at this time, but which could provide emission reduction comparable to existing technology. This method of reducing VOC's is included at the request of the printing industry. The specification 60% non volatile by volume of the composition less water will achieve equivalent emission control and permit dilution of high solids with water to achieve low viscosity".

Page H-8 XX.9640 Compliance Schedules We understand that this section is to assure steady stream impact on oxidant level prior to the December, 1982 attainment dated cited in the 1977 amendments. We suggest final compliance be achieved for all add on controls before July 1, 1982 for the following reasons:

1. The effect of emissions on oxidant level in the early part of theyear will have much less significance than during the warmer months - July and August. July and August monitoring should be adequate to determine effectiveness of emission control.

2. Extension to July 1, 1982 will allow an additional six months for evaluation and acceptance of available low solvent technology on products for which it has not heretofore been used. Six months experience is usually minimum for commitment to a major material or process change. The January 1, 1981 and 1982 dates do not provide opportunity for this necessary product assurance.

Page H-9 XX.9640 Compliance Schedules The alternate compliance schedule appears to consider the attainment date as December 31, 1982. We believe it should embody the technology forcing concept covered in Barber to Regional Directors, November 3, 1978 and Rasnick to Calcagni, September 18, 1978. (Copies attached). These cited references strongly advocate time extension for development of innovative superior low solvent inks and coatings. Time extension will be necessary for segments of the packaging industry wherein products such as polyethylene bread bags, snack packaging and other laminated products and barrier coating such as required for protection of detergent cartons cannot be accomplished with current low solvent materials.

The industry is, at this time, cooperatively segmenting the industry and developing time phased programs for each, consistent with that which has been allowed for the automotive industry. We believe that inclusion of this type of program in the model rule will promote advocated technology forcing low solvent coatings and will simultaneously prevent much confusion on the part of industry and the states themselves.

We, therefore, recommend that you modify the model rule by adding the second page of Barber's November 3, 1978 letter to the alternative schedule and using the last paragraph on page 2 (continuing on page 3) of Rasnick's letter as a discussion. These sections are highlighted in the attached copy.

We appreciate the opportunity to comment and will further appreciate the opportunity to discuss this subject as you consider appropriate.

Executive Director

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July 5, 1979

Mr. Tom Williams, Project Officer
Control Programs Development Division
MD – 15
Environmental Protection Agency
Research Triangle Park
North Carolina 27711

Re: Comments on Guidance Document for the
Group II Control Techniques Guidelines
for Volatile Organic Compounds

Dear Mr. Williams:

This letter is in response to your request for comments on the Guidance Document for the Group II Control Techniques Guidelines for Volatile Organic Compounds.

We are members of the GRI/GTA Gravure Industry Emission Control Subcommittee. Gravure Research Institute is the cooperative research organization of the gravure industry and Gravure Technical Association is our industry association concerned with industry standardization, trade relations, education,etc. Between Gravure Research Institute and Gravure Technical Association we represent all the publication gravure printers in the United States and most of the gravure packaging and specialty printers. Our Committee has extensive experience in gravure printing technology, the manufacture and use of gravure inks and in environmental control as related to gravure printing.

We appreciate the opportunity to make known to you our views on this Guidance Document which will have a significant impact on the gravure industry as it affects the development of RACT regulations by the various State and local agencies. We would like to offer our assistance in the development of the sample regulations to help insure that they are both technically and economically sound. Our committee has spent many hours in meetings and consultations with United States Environmental Protection Agency in commenting on the CTG document – "Control of Volatile Organic Emissions from Existing Stationary Source – Volume VIII: Graphic Arts, Rotogravure and Flexography", EPA - 450/2 - 278 - 033, OAQPS No. 1.2 - 109, issued in December 1978, and on the LAER guidance document for the graphic arts and the NSPS for publication rotogravure now being developed. We feel that our comments have helped USEPA to better understand the special technical problems of gravure printing particularly as it is differentiated from surface coating technology. We are prepared to meet with you to discuss our comments which follow, in further detail if it would be helpful.

First of all we would like to emphasize that the printing industry in general and the gravure industry in particular have certain characteristics affecting emission control which are not shared by many other industries.

1. The need for continuous visual inspection of the product and adjustments to maintain image quality requires the presence of pressmen at the press and a high rate of air changes in the pressroom to meet health standards and OSHA requirements. Most packaging products have to be solvent and odor free to meet Department of Agriculture and Food and Drug Administration regulations. As a consequence large amounts of air, much of it at low solvent concentration, are circulated requiring very large and expensive emission control equipment with high energy consumption.

2. The process is not continuous. Because of engraving corrections, paper breaks, etc., presses are operating typically only 60% to 80% of scheduled running time. In addition there are frequent job changes, make-ready periods, and seasonal slack periods. This greatly impairs the energy efficiency of regenerative incineration devices.

3. Ink coverage, i.e., solvent concentration in the air going to the control unit varies widely from job to job. Because of the danger of a malfunction, e.g., paper clogging a duct, the exhausts of press units with light ink coverage are not fully baffled down, leading to air with low vapor concentrations.

4. In many cases, the ability of printers to schedule time for emission control equipment maintenance is severly limited because of the need to meet deadlines for periodicals containing topical coverage such as news or catalogs containing price information. Such material cannot be produced ahead of time and held in inventory.

5. In packaging, a great variety of binder - solvent systems are presently used. In view of the present shortages and high costs of hydrocarbon solvents, solvent recovery by carbon adsorption and subsequent separation would be desirable. Some problems exist with corrosion - even with stainless steel construction. Simplification of solvent systems or restructuring the job mix for different plants will be necessary to make solvent separation and reuse feasible. For incineration or recovery, most existing presses will have to be equipped with new dryers to reduce the overall air flow. Special ducting to prevent mixing of different solvents may be necessary for recovery.

6. The total plant and dryer air system should in many cases be adapted or rebuilt to take maximum advantage of incinerator or solvent recovery.

7. Although promising, the technology for low solvent or water borne gravure inks has not evolved to a point where compliance can be assured by this approach by December 31, 1982. Additional time will be required for the necessary research and testing to perfect this technology. Five years is considered by EPA officials to be not an unreasonable length of time for this research and development.

In view of the above points, please consider the following changes in the proposed guideline document:

A. General Definitions – Pages A-2 to A-4

Carbon Bed Breakthrough: "that exceeds 10% by weight of –Add– "rated" inlet VOC concentration.

During press downtime the air reaching the recovery may have very low solvent concentrations, but some traces of solvent from the solvent inventory on the bed will still be exhausted. Alternatively, break-through could be defined as say, 200 ppm in the exhaust for more than 3 minutes or rapidly increasing exhaust concentration.

Overall Emission Reduction Efficiency: "The weight per unit time of VOC removed by a control device divided by the weight per unit time of VOC emitted by a source" –Add– "measured over at least a month" expressed as a percentage.

Experience obtained by solvent recovery users and in testing for the NSPS for publication rotogravure indicates that the only practical way to measure overall emission reduction efficiency is by a materials balance taken over as long a period as possible – a month or longer.

The definitions of "Facility" and "Source" are confusing and appear to be in conflict with latest EPA terminology.

A definition of "Oven" is given but no definition for "Dryer" which is the device used in gravure printing. We suggest that the following definition of "Dryer" be included.

Dryer: A device used to cause evaporation of solvents from inks or coatings and convey these materials away from the substrate producing a dryed product.

A definition of "Construction" is given which includes the word "Commencement" which is not defined. We suggest the following definition of "Commencement" be included.

Commencement: An owner or operator has undertaken a program of construction or modification or that an owner has entered into a contractual obligation to undertake or complete, within a reasonable time, a program of construction or modification.

B. *XX.9610 Definitions – Page H-2*

(1) "Packaging rotogravure printing" means printing –Add– "from intaglio or recessed image areas in the form of cells" upon paper, paper board, metal foil, plastic film, and other substrates, which are, in subsequent operations, formed into containers and labels for articles to be sold.

(2) "Publication rotogravure printing" means printing –Add– "from intaglio or recessed image areas in the form of cells" upon paper which is subsequently formed into books, magazines, catalogs, brochures, directories, newspaper supplements, and other types of printed materials.

C. *XX9620 Applicability – Page H-3*

(a) This regulation applies to all packaging rotogravure – Change to – "publication" rotogravure and flexographic printing facilities located in a photochemical oxident nonattainment area in the State of ______________.

The term "printing rotogravure" used on pages H-3, H-6, H-8 and H-9 is not commonly used in the graphic arts industry. The term "publication rotogravure" is more common and its use will clarify the Document.

(b) It should be made clear that "potential emissions" are those emissions which remain after the application of pollution control equipment, in accordance with "Alabama Power vs Castle" decided by the District of Columbia Court of Appeals just recently.

Page H-4 Last Sentence – "It should be assumed that all of the solvent consumed evaporates into the atmosphere" – Add – "except for solvent retained in the substrate".

In publication rotogravure 5 - 7% of the solvent is retained in the substrate. In packaging rotogravure the retained solvent depends on the ink system and substrate.

D. *XX.9630 Provisions For Specific Processes – Pages H-5, H-6*

(3) The owner or operator installs and operates;

(i) A carbon adsorption system which reduces the volatile organic emission from the capture system by at least, – Change to – "90.0" percent by weight

Recognizing the intermittent nature of gravure printing, the Volume VIII CTG Document provides for a reduction efficiency of 90.0% of the VOC delivered to the carbon adsorption system. We feel the sample regulation should use a reduction efficiency of 90.0% not 95.0%.

(iii) An alternative volatile organic compound emission reduction system demonstrated to have at least – Change to – "90.0" percent reduction efficiency measured across the control system, that has been approved by the Director.

To encourage development of alternative systems the required percent reduction efficiency should not be higher than that required under *(i)* or *(ii)* for carbon adsorbtion and incineration systems.

Discussion – Last Paragraph

We favor the alternative wording calling for ranges of capture efficiency. This follows the CTG's basic assumptions and is in accord with the bubble concept philosophy of allowing greater add-on efficiency to compensate for a capture system's problems, so long as, the overall efficiencies are obtained.

E. *XX.9640 Compliance Schedules – Pages H-8, H-9, H-10*

It should be realized that regenerative incineration as well as solvent recovery require large, heavy equipment, which can run into millions of dollars of investment and which should be carefully integrated into the general plant mechanical system. Extra boiler capacity and plant structural re-enforcements may be needed. A careful, customized plant engineering job is required for reasonable energy efficiency. This is not normally the concern of control device manufacturers. The rush to install solvent recovery systems for supposedly "non corrosive" publication solvents in the early 1970's led to units which had and still have severe corrosion problems and even internal structural collapses. We feel that the compliance schedule is too tight for a number of publication rotogravure printers where space considerations require major plant alteration and not practical at all for packaging printers.

Recognition has to be given in the compliance schedule to the time required for approval of construction permits, the seasonal limitations imposed by weather conditions affecting construction, particularly in winter in northern states, the time required for retrofitting of control equipment in such a way as to avoid excessive disruption of production schedules and other such considerations. Of great importance is the need to recognize in the compliance schedule, the differences between packaging rotogravure, publication rotogravure and flexographic printing, not only as to the levels of emission control achievable but also as to the state of the art of the technology for emission control either by add on controls or water base or low solvent technology.

The ink industry has testified many times that low solvent technology for all phases of rotogravure and flexographic printing is not available. Certain portions are currently available but not for general use. The consensus is that complete development of low solvent technology will take five years.

To submit final plans by April 15, 1980 would effectively eliminate the options of low solvent ink. The available options would be add on controls requiring large capital outlays.

Similarly the selection of control equipment could not intelligently be made by the date. Solvent recovery design depends largely on the particular solvent used.

Evaluation of this would violate current Rule 66 type legislation and require considerable time.

The most reasonable schedule for packaging gravure appears to be a percentage reduction in steps over a five year period. This would promote development of low solvent materials and allow time for evaluation of options if low solvent systems are not satisfactory.

While control equipment is currently available the choice of technique is the problem. Developing these answers will take time. The short schedule will result in large capital investments in equipment that may quickly become obsolete. It will also stifle the development of new low solvent technology. It is recommended that for packaging rotogravure an alternate compliance schedule providing for the development of low solvent technology be included in XX.9640 (b) in a form as suggested in the Barber letter of November 3, 1978 to the Regional Directors and the Rasnic to Calcagni Memorandum of September 18, 1978, copies which are attached.

For publication rotogravure we recommend the following changes in the compliance schedule of XX.9640 (a)(1).

(a)(1)

(ii) Award contracts or issue purchase orders for the emission control system or process equipment, or both – Change to – "within 60 days of approval of construction permits and not later than October 15, 1980"

This is in recognition of the fact that these steps cannot be taken until construction permits are obtained.

(iii) Initiate on site construction or installation of the emission control or process equipment or both – Change to – "before May 1, 1981"

This allows for winter construction delays in the northern states.

(iv) Complete onsite construction or installation of the emission control or process equipment, or both – Change to –"before 18 months from (iii) or before October 15, 1982."

(v) Achieve final compliance, determined in accordance with XX.9650 before – Change to – "December 31, 1982"

These changes follow from the changes in *(ii)* and *(iii)* and provide additional time for retrofitting of equipment without excessive disruption of production.

We recommend similar changes in the compliance schedule XX.9640 (a)(2) for incineration equipment without heat recovery to allow sufficient time to obtain permits and retrofit equipment to avoid excessive disruption of production.

XX.9650 Testing and Monitoring Page H-11, H-12, H-13

With carbon adsorption, specification of control device efficiency or its measurement appears not necessary as long as the total plant recovery efficiency is measured by a materials balance. If measured stack exhaust should be integrated over about 24 hours. The tolerance of air flow and concentration measurements to the recovery can be ± 10% so that the use of this measurement for materials balance purposes is questionable. Data from plant meters, i.e., solvent from tank to plant, recovered solvent meter and ink meters can yield in most cases, a reliable materials balance when taken over sufficient time periods, i.e., one month minimum to eliminate the effects of varying solvent inventories in the carbon beds, storage tanks and press fountains.

Paragraph (b) A person proposing to conduct a volatile organic compound emissions test – Add– "to demonstrate compliance" shall notify the Director of the intent to test not less than 30 days before the proposed initiation of the tests so the Director may at his option observe the test. The notification shall contain the information required by, and be in a format approved by, the Director.

Emission test data should be only reported when a test is being conducted to determine compliance otherwise, internal testing will probably not occur at all.

Paragraph (c)(1)(*i*) states that test procedures to determine compliance must be consistent with EPA Guideline Series document EPA-450/2-78-041. The usefulness and practicality of this test procedure, based on the determination of organic carbon mass concentration, for this purpose is questioned and it is suggested that this test procedure be reviewed in the light of the experience obtained in the NSPS tests for publication rotogravure being conducted by EPA.

Paragraph (c)(1)(*ii*) refers to test procedures given in Appendix A of CTG Volume II. The applicability of these tests for the highly volatile inks used in gravure is questioned.

Discussion

Comments on a definition and procedure for determining the rate of ink usage are requested. We suggest the use of a materials balance taken over a sufficiently long period — at least a month — be used. The materials balance approach should also be used in calculating overall emission reduction efficiency with allowance made for solvent retention in the substrate and a sufficiently long period — at least a month.

Part III General Provisions

There has not been time for our committee to comment in detail on Part III — General Provisions. Our overall reaction is that the proposed regulations are too complex and involve too much record keeping of questionable value, e.g., the requirement in XX.8070 (b)(1) that a daily written record be kept of all monitored parameters would impose an unnecessary burden on printers and would be of little value toward insuring compliance. Storage of such records for 4 years is likewise of little value and an unnecessary expense. We agree that important events like start-up, shut down, breakdowns or malfunction should be recorded and overall performance records be maintained for a reasonable period of time. We recommend that the General Provisions be drafted in simpler language avoiding unnecessary record keeping and other expensive requirements which do not contribute to the overall objective of emission control.

We appreciate the opportunity to comment on this Guidance Document and will be glad to assist further in whatever way we can. If you have any questions on any of the above please contact us.

Yours sincerely,

Harvey F. George, Chairman
GRI/GTA Gravure Industry Emission Control
Subcommittee

HFG:ep
Encl.

GRAVURE TECHNICAL ASSOCIATION, INC.
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212-661-8936

Warren R. Daum
VICE PRESIDENT-EXECUTIVE DIRECTOR

June 7, 1979

Mr. Tom Williams
Project Officer
Control Programs Development Div.
United States Environmental Protection Agency
Office of Air Quality Planning & Standards
Research Triangle Park, NC 27711

Dear Mr. Williams:

Today we received the draft of your "Review of a Guidance Document for the Group II Control Technique Guidelines for Volatile Organic Compounds". We appreciate being kept informed and holiday spirit not withstanding we are trying to apply ourselves to an appropriate reivew.

I am sure you know that GTA and GRI have joined together and formed a committee to provide imput for our industry. Mr. Harvey George, Vice President Executive Director of GRI, has been elected Chief Executive Officer of this project. He will be sending you our observations as representative of both GTA and GRI.

I'm sure you are aware of the contributions made by our committee, and I'm equally sure you will find Mr. George and his organization most helpful.

Thank you for keeping us infomed and if there is any way in which we can be of help please let us know.

Cordially yours,

Warren Daum
WD/hh

cc: Harvey George

napim NATIONAL ASSOCIATION OF PRINTING INK MANUFACTURERS, INC
550 Mamaroneck Avenue, Harrison, New York 10528 914-698-1004
JAMES E. RENSON, Executive Director

June 19, 1979

Mr. Tom Williams
Control Programs Development Division
MD-15
Environmental Protection Agency
Research Triangle Park, NC 27711

Re: Guidance Document for Group II, Control Techniques Guidelines for Volatile Organic Compounds

Dear Mr. Williams:

Thank you for your recent letter calling our attention to the proposed Guidance Document for Group II, Control Techniques Guidelines for Volatile Organic Compounds. We appreciate your invitation to comment on this draft document.

The National Association of Printing Ink Manufacturers working through the Environmental Conservation Board of the Graphic Arts Industry has provided substantial inputs to EPA at the time of the drafting of the Control Techniques Guideline Document by the Office of Air Quality Planning and Standards during informal meetings with Mr. Ed Vincent and others. NAPIM has also provided inputs and other statements in written form to the Office of Air Quality Planning and Standards on this subject. We trust that the information previously provided by NAPIM is part of the record.

In view of information already provided, NAPIM has no further comments to make on the guidance document at this time.

We appreciate your keeping us informed on developments in this matter and hope that you will continue to alert us to any further changes in the status of the proposed guidance document.

Sincerely,

James E. Renson
Executive Director

jj

Reeco **REGENERATIVE ENVIRONMENTAL EQUIPMENT CO., INC.**
BOX 600 • 520 SPEEDWELL AVENUE • MORRIS PLAINS NJ 07950 • PHONE (201) 538-8585

June 19, 1979

Mr. Tom Williams
Project Officer
Control Programs Development Division MD 15
ENVIRONMENTAL PROTECTION AGENCY
Research Triangle Park, NC 27711

Subject: Review of a Guidance Document for the Group to Control Technique Guidelines for VOC

Reference: EPA Draft Part I and III

Dear Mr. Williams:

In reviewing the draft regulations for Graphic Arts Systems, we find that although some oxidation equipment has been mentioned as a viable solution, the real potential in cost effectiveness needs additional clarification.

Highly efficient thermal oxidation equipment with 85 and 90% primary heat recovery have and are being installed on printing processes and are providing substantial return on investments. The high thermal energy recovery of the RE-THERM Unit will allow the system to operate at a "NIL" fuel usage, plus provide clean preheated drying air to the presses. The utilization of the clean exhaust from the RE-THERM Unit as make-up or drying air at the press will provide additional secondary heat recovery. This additional energy savings can be substantial and should be considered even though the dryers operate at a low temperature.

The attached table reflects typical applications of the RE-THERM System in rotogravure printing applications. You will note that there is an overall plant energy reduction on each application when the clean exhaust from the RE-THERM is utilized. In the case of rotogravure packaging where solvent concentrations are higher, the energy savings can be substantially greater than those reflected in the attached table. In any case, this technique has been and is being utilized on several printing applications.

May I repeat the most significant point . . . The RE-THERM System will reduce the plant energy requirement while providing pollution control.

We trust that the above point, that volatile organic compound control can be achieved while still reducing the overall plant energy consumption will be clarified in your final report to the industry.

Respectfully yours,

Rodney L. Pennington jd

Rodney L. Pennington
Sales Manager

RLP:jd

Energy and the Environment

RE-THERM WITH 85% THERMAL ENERGY RECOVERY

Capacity Gas Flow SCFM	Operat Facto (HR/YR	VOC Emission Rate (#/HR)	VOC Energy Valve (BTU/HR)	RE-THERM Fuel Req't (MM BTU/HR)	Secondary[a] Energy SAVINGS (MM BTU/HR)	Annual Fuel Costs (SAVINGS)[b] RE-THERM Only	Annual Fuel Costs (SAVINGS)[b] RE-THERM WITH Secondary Recovery
1,000	1,000	[illegible]	139,500	0.104	0.233 SAVINGS	$260	$(322)
330	1,000	9	139,500	"NIL"	0.128 SAVINGS	"NIL"	$(320)
3,000	2,000	28	403,000	0.328	0.699 SAVINGS	$1,644	$(1,855)
1,000	2,000	28	403,000	"NIL"	0.373 SAVINGS	"NIL"	$(1,865)
10,000	2,000	97	1,503,500	0.936	2.330 SAVINGS	$4,680	$(6,970)
3,300	2,000	97	1,503,500	"NIL"	1.366 SAVINGS	"NIL"	$(6,[illegible])
20,000	3,000	260	4,030,000	0.849	4.660 SAVINGS	$6,367	$(28,882)
6,700	3,000	260	4,030,000	"NIL"	3.661 SAVINGS	"NIL"	$(24,457)
150,000	3,000	1070	16,535,000	20.008	34.953 SAVINGS	$150.059	$(112,087)
50,000	3,000	1070	16,585,000	"NIL"	15.570 SAVINGS	"NIL"	$(116,775)

"NIL" - Burner will operate at low fire which will vary slightly with burner size due to turn down ratios.

a) Based on 50°F ambient air and 70% of clean exhaust from RE-THERM being returned to the process/plant.

b) Used $2.50/MM BTU Fuel Cost

c) NET PLANT ENERGY SAVINGS

Reproduced from best available copy.

Rexham
PACKAGING RESEARCH CENTER
CHURCH STREET EXT.
FLEMINGTON, NEW JERSEY 08822
201/782-4100

July 16, 1979

Mr. Tom Williams
Control Programs Development Division
MD-15
Environmental Protection Agency
Research Triangle Park,
North Carolina 27711

Dear Mr. Williams:

Attached are Rexham's comments on the Draft Guidance Document for Group II Control Technique Guidelines for Volatile Organic Compounds.

We realize that the questions that we shall raise in this letter are not the specific issues under discussion in the Guidance Document and so are separated from our direct comments. Our questions in this letter refer to whether or not the air quality goal is attainable and whether or not the strategy to attain the goal is reasonable.

We as a company recognize our obligations to reduce the quantity of solvent emitted from our operations. We are now involved in significant changes to reduce emissions and we are committed to an on going program in this regard. Further, we have installed control devices where they are appropriate.

We are very much concerned, however, that the stringent requirements incorporated in the Guidance Document will be unsuccessful in attaining the primary standard for ozone regardless of the efforts applied. If such stringent measures are pressed to the fullest extent of the states powers the net effect will be to stress the economy without obtaining a commensurate improvement in air quality.

The natural sources of hydrocarbons in the air far exceed the anthropogenic sources and substantially control the ozone level in many areas of the United States. In these areas the air quality standard of 0.12 ppm is unrealistic and unattainable. A complete shutdown of industry in such areas would have little effect on major "smog" episodes. We note that the high ozone levels in California in 1978 were predicted based on a correlation between winter rain and summer ozone. We believe that the ozone level in the Northeast is strongly influenced by the natural emissions from the Southern Appalachian mountains.

The scientific basis for control of VOC is weak and in the case of water miscible solvents it is virtually non existant. We are particularly sensitive to this issue since we operate a number of flexographic printing presses where the emissions consist substantially of mixed alcohols.

We believe that EPA should reconsider the ozone standard and the attainment strategy so that the massive effort that will be put in motion will have a clear chance of success.

Very truly yours,

T. M. Bassett
Environmental Affairs Coordinator

TMB/bjs

Enclosure

Rexham Corporation June 29, 1979

COMMENTS ON THE GUIDANCE DOCUMENT FOR THE GROUP II CONTROL TECHNIQUE GUIDELINES FOR VOLATILE ORGANIC COMPOUNDS

INTRODUCTION:

Rexham Corporation is a producer of flexible packaging materials, and so operates rotogravure and flexographic presses, laminators, coaters, and a number of machines that involve combined operations. This activity is conducted at a number of plants, some quite small. Rexham's significant markets include flexible packaging for foods, drugs, medical devices, and soft goods.

COMMENTS:

1. Definition of RACT - "economic feasibility"

The definition of Reasonably Available Control Technology (RACT) specifically includes the test of "economic feasibility". If guidance to the states is required on any issue it is required here. It is recommended that FPA provide a series of tests to amplify the meaning of "economic feasibility". We suggest that the following test be included:

a. Capital value of equipment: The cost of a device, including installation shall not exceed the cost of the prime machine (invoice value). It is unreasonable to require a retrofit that would cost more than the prime machine.

b. Age of equipment: The age of equipment should be taken into account in establishing a requirement for a device. Further, old equipment should be granted an emission discount for purposed of the "Bubble Concept". For example, a press 15 years old or older should have a 50% discount when calculating emissions.

c. Utilization of equipment" The degree of control for equipment used less than 5000 hours per year should not be equivalent to that required for a machine that is fully utilized. There are a number of machines in the flexible packaging industry that are used for a very few grades, and are idle at other times.

d. Inflationary impact: The cost of pollution controls shall not add more than five percent to the cost of materials manufactured at any single location in order to minimize the cumulative inflationary impact through the chain of manufacture and distribution.

If despite failure of one or more tests a device is to be required the Authority shall issue a letter, signed by the Director, reviewing the situation and confirming the requirement for a device.

2. Question and Answer on page H-7

It is highly desirable for reasons of consistent enforcement to have all operations at a single flexible packaging plant regulated under the same guideline, i.e. the Graphic Arts guideline. This approach would avoid the confusion that will exist if a "Bubble concept" plan is to be prepared for a location operating under two different guidelines.

3. Compliance Schedules

The compliance schedules are unrealistic and invite over optimistic projections. The design construction of an incinerator and air handling system is a time consuming enginerring effort, especially for retrofit installations. Because of the variety and complexity of abatement options available we suggest the following schedule:

a. Submit plan for compliance before March 13, 1980 including a tentative schedule.

b. Submit an annual report of activity with a revised compliance schedule that reflexts the progress of the past year and the advances in the state of the art for compliance.

- In many areas, such as low solvent technology the state of the art will change, perhaps substantially, in a year, so a revised compliance schedule is in order.

4. Carbon Absorption System (page H-5)

The Guidance Document assumes that a carbon bed is always 95% efficient. Further, any carbon bed that is less than 95% efficient would be in violation. Under this regulation nine of ten carbon beds now in operation would be in violation. Carbon bed absorption involves many problems of fouling and loss of efficiency.

It is recommended that an efficiency of 85% or better be required at start-up, and that thereafter the carbon bed meet commercial standards of efficiency.

5. Discussion - Water Borne Technology (page H-12)

The technology of water borne inks and coatings is now emerging and the prospects for achieving compliance by this route appear to be good assuming the technology continues to advance at its present pace. The Guidance Document does not discuss the experimental nature of this approach so it may be assumed by state authorities that aqueouse inks and coatings are "off the shelf" items for all uses. We suggest that EPA consult with the appropriate trade associations for a realistic presentation of the current state of water borne technology.

6. Specialty Items

It is recommended that special consideration be given the many low volume specialty items that are used for highly regulated end uses such as Health Care packaging or high performance end uses such as packaging chemicals e.g. pesticides. The solvent emission involved in manufacturing such items is a minor part of the total emissions of the industry. Replacement of components to avoid the use of solvents will be difficult and time consuming, and we believe that the priority should be placed elsewhere. We suggest that an "exempt" class be established for specialty items for a period of time such as three years.

&. 100 TPY Size Limitation

We believe that a blanket exemption from control for any establishment emitting less than 100 tons per year is grossly unfair and may constitute unequal application of the law.

The Flexible Packaging Industry is comprised of a large number of very small operations, and relatively few medium sized and large operations. In effect the small entrepreneur would be permitted to operate without restraint or responsibility, while a medium size or large business would bear the full costs of the stringent requirements. It should be noted that the 100 TPY exemption would apply to almost half of the business in this industry. Further, it would encourage a small operator to avoid the requirements by setting up new locations rather than adding equipment at one location.

8. Business Growth

The Guidance Document encourages the contraction of a business by providing credits for the shut down of equipment and by imposing substantial penalties for the installation of new equipment. We believe that this is unwise at a time of economic stress, and was not intended by Congress when the Clean Air Act was under consideration. We ugre that, at a minimum, the Guidance Document permit transfer of "old" equipment from one location to another under RACT requirements. Futher we urge that the Guidance Document clearly permit increased utilization of equipment at a location by adjustment of the "Bubble Concept" base and goal.

9. Energy Consumption

The Guidance Document should provide instructions to the states on the question of the acceptable trade-off of solvent emission reductions against increased energy consumption. For each location both the solvent emissions baseline and the energy consumption baseline is known. It would seem inappropriate and unacceptable to reduce solvent emissions from a location by 25 percent at a cost of a 100 percent increase in energy consumption. We suggest that, in general if the energy required to operate a device calculated as gallons of No. 2 fuel oil (i.e. 140,000 BTU) exceeds the volume of solvent destroyed or recovered calculated as gallons, the device would be considered inefficient and not required except in unusual circumstances. For example, if an incinerator requires two gallons of fuel oil to destroy one gallon of solvent the device would be considered inefficient, and not be required.

bjs

REYNOLDS ALUMINUM
REYNOLDS METALS COMPANY • RICHMOND, VIRGINIA 23261

July 5, 1979

Mr. Tom Williams
Control Programs Development Division
MD-15
Environmental Protection Agency
Research Triangle Park, North Carolina 27711

Dear Mr. Williams:

Reynolds Metals Company, welcomes the opportunity to provide comments on the draft guidance document GCA Corporation is developing under contract to the Environmental Protection Agency (EPA) to assist State and local agencies in preparing RACT regulations for the Graphic Arts Industry. The comments provided below reflect Reynolds' experiences in the Graphic Arts Industry and Reynolds' understanding of the technical and regulatory issues encompassed by the Graphic Arts Control Techniques Guidance document.

Reynolds has several concerns with Section XX.9620 entitled, Applicability (refer to Page H-3). The Clean Air Act Amendments of 1977 require the adoption of "reasonably available control technology" (RACT) on existing sources located in nonattainment areas. Section XX.9620 (b) indicates that the EPA apparently desires to require the installation of RACT controls on at least major sources in attainment areas. Reynolds believes that the Agency lacks the requisite statutory authority to require State or local agencies to adopt RACT regulations in attainment areas. Accordingly, Reynolds believes that the guidance document being prepared by GCA Corporation should not address the establishment of emission standards in attainment areas. Reynolds takes this position in view of the absence of statutory authority and the fact that any reference to attainment area emissions in the guidance document merely confuses the issue of what is required of an approvable state implementation plan.

Throughout the applicability section and ensuing discussion, the document indicates that potential emissions are to be calculated based on historical records of actual consumption of solvent and ink. The term "consumption," as it is employed in the body of the document , apparently implies total input of inks and solvents will be considered in determining total volatile organic compound VOC) emissions. In that waste inks, coatings, adhesives and solvents are generated and disposed of through authorized means, as far as a printing plant is concerned, Reynolds believes that consumption should be defined as the summation of VOC input less VOC disposal by other authorized means.

In view of the recent court decision in Alabama Power Company, et al V. Costle No. 78-1006, Reynolds further believes the definition of potential emissions employed in the guidance document is in need of substantial modification. Reynolds generally agrees with the Court's opinion in the referenced case that potential emission calculations must credit emission reductions secured through the proper use of the air pollution control devices.

Reynolds believes that the applicability section would be greatly improved by the addition of an emission floor threshold below which additional control would not be required. Sources emitting less than 100 tons per year VOC represent a very small portion of the flexible packaging industry. Requiring the installation of control equipment on such minor sources does not appear to be justified on a cost-effectiveness basis. Accordingly, Reynolds believes small sources with potential emissions below 100 tpy should be exempt from the RACT regulations.

Reynolds' most serious concerns with the draft GCA guidance document are with Section XX.9630 entitled Provisions for Specific Processes (refer to Page H-5) and Section XX.9640 entitled Compliance Schedules (refer to Page H-8). It appears to Reynolds that these regulations were developed for paper printing and that foil or plastic film substrates were not properly considered. The discussion following Section XX.9630 appears to imply that water-borne inks are commonly employed on foil and plastic substrates. Water-borne inks may be reasonable for paper printing, but are certainly not an available technology for impervious substrates such as metal foils and plastic films. Additionally, we doubt that satisfactory water-borne materials are available for process or partial dot printing regardless of the substrate involved.

The discussion following Section XX.9630 also implies that add-on control equipment is generally readily available to the Graphic Arts Industry. The Agency's attempted transfer of technology from what they consider to be similar sources fails to recognize the complexity and necessity of producing food grade flexible packaging material. Packaged food product quality can be easily impaired by residual solvents and steps to increase the concentration of VOC in printing press exhausts can create an unsatisfactory product quality situation. Add-on control technology is not feasible unless VOC concentrations in exhaust gas concentrations and contemporaneous decreases in oven air flow rates can be realized. Any effort, however, to effect such modifications to current operating practices must be carefully and meticuously researched to assure that high quality food packaging material is not adversely impacted. Research in these areas has just begun. Reynolds believes that it is incumbent upon EPA to recognize in the model rule guidance document the complexity of controlling emissions from flexible packaging materials. The production of high quality flexible packaging materials is vital to the nations food and drug distribution channels. Any proposed modification to the production process requires a more careful and complete examination than has been given in the draft guidance document.

The categorical compliance schedules provided in Section XX.9640 apparently are based in large part on the assumption that control technology is readily available to the flexible packaging industry. As heretofore discussed, control technology is not readily available to large segments of the flexible packaging industry. The categorical compliance schedules indicate compliance must be achieved by either January 1, 1982 for process equipment changes, low solvent technology, and add-on control devices including incineration with heat recovery or by January 1, 1981 for incineration equipment without heat recovery. Reynolds believes that for printing on impervious substrates and partial or process dot printing these schedules are unreasonable and unattainable. High solids and water-borne coating systems have not been adequately developed for impervious substrates. Packaging materials produced by Reynolds, among other producers, are necessary and integral to the country's food and drug distribution system. Modifications to ink systems and production methods will require many approvals in addition to EPA permits. Customer shelf life and taste tests alone may require up to one year. Obtaining approval of the Food and Drug Administration to utilize new inks may require, in certain cases, up to two years. The high priority the industry places on developing suitable inks is evidenced by the estimated 75 percent or greater ink industry R & D directed at low solvent technologies. EPA in the model rule should recognize that the industry deserves the time to develop low solvent technologies. The categorical compliance schedules, in effect if adopted, will stifle a significant portion of low solvent technology development efforts.

Reynolds believes that reasonable progress towards attainment of the ozone national ambient air quality standard, can be achieved without the wholesale adoption of categorical compliance schedules which ignore the complexities of producing food grade flexible packaging materials and the like. We believe that reasonable further progress can be achieved while simultaneously allowing for the development of technolgies suitable to the flexible packaging industry. A stepwise program to reduce VOC emissions at flexible packaging plants would accomplish these two worthy objectives. A reasonable five year program to control VOC emissions at a flexible packaging printing plant would be:

(1)	Submit compliance plan	12 months after plan approval
(2)	Reduce VOC emissions by 16.25% (1/4 of 65%)	24 months after plan approval
(3)	Reduce VOC emissions by 32.5%	36 month after plan approval
(4)	Reduce VOC emissions by 48.75%	48 months after plan approval
(5)	Reduce VOC emissions by 65%	60 months after plan approval

A compliance plan such as this will allow the development of suitable technologies in the most advantageous way to the country. Progress towards attainment of the national ambient air quality standard will be achieved with minimum disruption to the flexible packaging industry.

Due to our serious concerns with the Graphic Arts model rule, Reynolds hereby requests the opportunity to meet with the Agency and/or its contractor to discuss its recommendations prior to the time the draft guidance document is finalized. Should you feel such a meeting would be worthwhile, please feel free to contact me at (804) 281-3871.

Sincerely yours,

E. C. Tropea
Director of Environmental
Control
Environmental Control Dept.

/ct

cc: K. N. Weiss

July 26, 1979

Mr. Tom Williams, Project Officer
Control Programs Development Division
MD-15
Environmental Protection Agency
Research Triangle Park, North Carolina 27711

SUBJECT: Comments on Draft Sample Regulations for VOC Control of Graphic Arts

Dear Sir:

The following comments and recommendations are submitted in response to the draft EPA guidance document on regulation of VOC controls for graphic arts. The sample regulation is quite comprehensive in nature and, when reviewed with the discussions and appendices provided, represents far more than just an additional emission regulation. Consequently, there are two areas to be addressed:

1) improvements in the sample VOC regulation presented, and

2) identification and comment on policy questions and future strategies that are implied in the discussions and appendices.

Sample Regulation for VOC Control of Graphic Arts

1) Section XX.9620 (b) Applicability, Which specifies use of historical records on consumption of solvent and ink, is a reasonable approach to determine potential emissions and, thereby, identifying sources subject to regulation. Caution should be exercised, however, when calculating actual consumption of solvent and ink. An overly simplistic approach, such as use of purchase records alone, may result in an excess of emissions charged to the facility. A certain amount of solvent leaves the plant as waste to be disposed of, or returned to the supplier for reprocessing. Therefore, the emissions from waste material should be counted as emissions. This solvent should be subtracted from the purchased solvents to arrive at actual emissions.

RJR Archer, Inc.
Winston-Salem N C 27102

July 26, 1979

2) Section XX.9630 (3) Provisions for Specific Processes, specifies in (i) and (iii) that the capture efficiency of carbon adsorption or alternative controls must be at least 95%. This is more stringent than the recommendation of the CTG document in Section 1.2.1 which states, "A reduction efficiency of 90 percent of the VOC delivered to these devices (carbon adsorption and incinerator) can and should be achieved." It is recommended that the capture efficiency be uniformly set at 90% for all control methods. In addition the language of (3) can be cleaned up by using the term "capture efficiency", which has been defined previously, instead of attempting to describe the desired result.

3) Section XX.9640 (b) Compliance Schedules, is imperative to allow sources using strategies that are based on low solvent technology or process change to write more appropriate increments of progress than those provided in a (1).

4) Section XX.9650 (c) (2), Testing and Monitoring, is a reasonable method of determining compliance for low solvent technology and provides the most cost effective approach to assuring compliance. Direct testing should be minimized.

5) Section XX.8010 (c) Applicability, should include the exemption of graphic arts pilot plant operations. The discussion clearly implies that these operations are not intended to be regulated. Application of Section XX.9620 (b) does not alleviate the situation since the word "facilities" is used rather than the word "source". It is recommended that (c) be amended to read "Part (b) (1) of this section does not apply to the following regulations."

6) Section XX.8030 Inspection, Maintenance, and Operating Procedures, requires the Inspection and Maintenance Manual to be available before the final compliance date. The discussion adds that if more than one device is included in the manual the earliest final compliance date is the appropriate one for the entire manual. There is no benefit to air quality from this interpretation, and it may be impossible to meet if different vendors are involved.

7) Section XX.8040 (a) Breakdown, Malfunction and Operation Changes, requires the source "immediately" notify the Director. Immediately is imprecise and needs to be qualified in terms of specific periods of time and with respect to precedence to safety of employees or others in the vicinity.

8) Section XX.8040 reporting can be construed as redundant of the non-compliance penalty regulations. This section could be eliminated, or at a minimum, coordinated with the non-compliance penalty regulations to avoid conflict or duplication.

RJR Archer, Inc.
Winston-Salem N. C. 27102

July 26, 1979

POLICY AND STRATEGY IMPLICATIONS

1) Since the sample regulations are not subject to a formal public review process and will be circulated to the states as guidance, development of some interpretive policies is inappropriate in this document. Policy relating to "bubble concept", non-compliance penalties, and other major regulations is developed in the discussions with no mention of maintaining consistency, avoiding overlaps and, in some cases, based on proposed policy.

2) Mr. Hawkins' memorandum of July 3, 1978 states that, "For VOC sources, only source categories covered by a CTG document could be included in a RACT Bubble." This requirement is unnecessarily restrictive since it does not allow maximum flexibility to use the most cost effective mix of controls. As long as a source can demonstrate equal environmental benefit and equal emissions reductions, there should be no qualification of what sources can be used in "internal offsets".

3) In the memorandum mentioned, there is a reference to elimination of "internal offsets". Elimination of the "internal offset" policy will not only reduce incentive to develop new and more effective methods of control, but also reduce the ability of a facility to minimize the economic impact of controlling emissions. Allowing industry to choose the most cost-effective approach to control will not conflict with achieving the ambient air quality standards.

In summary, I would like to thank you for the opportunity to present the viewpoint of RJR Archer, Inc. on the draft sample regulations for VOC control of graphic arts. We feel that availability of sample regulations is beneficial to the states for developing workable SIP revisions, if careful attention is given to wording. For instance, use of specific percent reduction values or other definite numeric limits may encourage states to adopt regulations with unrealistic limits. This possibility could be reduced by substituting a noncommital value like "XX%". Additionally, policy discussion on interpretation of the regulation should be limited to that which has already been decided in the public forum, rather than internal views. If you have any questions or would like to discuss any of the comments further, please call Mr. John Kartanson at 919-748-4416, or Connie Jurgensen at 748-4611.

Very truly yours,

L J Upton Jr.

L. J. Upton, Jr.
Vice President

LJUJr/jg

cc: Thomas J. Dunn

ST REGIS PAPER COMPANY Gulf Life Tower, Jacksonville, Florida 32207 (904) 396-5741

June 28, 1979

Mr. Tom Williams
Control Programs Development Division
MD-15
Environmental Protection Agency
Research Triangle Park, North Carolina 27711

Dear Mr. Williams:

The following comments, on the draft of the guidance document for State and local agencies in preparing RACT regulations for volatile organic compounds, are submitted by St. Regis Paper Company.

St. Regis Paper Company is a fully integrated forest-based products company whose primary lines of business are the manufacture and sale of pulp, paper and paperboard, newsprint, packaging and converted products and construction products. The St. Regis packaging and converted products include overwraps, pouches, and bags of plastic and composite film for distribution of baked goods, snacks and other food and household products; multiwall bags, consumer bags, and plastic film for distribution of chemical, mineral and agricultural commodities, human and animal foods, and consumer products; folding cartons for distribution of consumer products; laminated, coated, and reinforced materials for construction, packaging, graphic arts, and industrial uses; and paperware school supplies, envelopes, and grocery bags for consumer, retail and institutional markets. In producing these products the flexographic and rotogravure printing processes are of major importance. St. Regis Paper Company is therefore concerned that reasonable, feasible, and cost effective regulations are adopted by the States for the graphic arts industry. It is for this reason that the following comments on the guidance document are made.

Page H-2, XX. 9610 Definitions

Since flexographic printing has been defined in (3), a definition of rotogravure printing should also be included. The following definition is suggested:

> "Rotogravure Printing" means the application of words, designs and pictures to a substrate by means of a roll printing technique in which the pattern to be applied is recessed relative

to the non-image area. The image is in the form of cells or cups mechanically or chemically etched in the surface of copper-plated steel cylinder which is usually also chrome plated to enhance wear resistance.

The definition of "Packaging rotogravure printing" in (b) (1) is narrowly restricted by specifying that subtrates are formed into "containers". Containers, in the industry, usually means a particular kind of packaging product. It is suggested that "containers" be omitted and be replaced by a more general term, such as "packaging product".

Page H-3, XX. 9620

To be consistent with the language found elsewhere in the guidance document and in the Volume VIII CTG document, "publication rotogravure" should be used instead of "printing gravure". This change should be made in the following places:

Page H-3, XX.9620
(a) last word in line 1
Discussion, third paragraph, fifth line

Page H-5, XX.9630
(a) next to last word in line 1

Page H-6
(c) last word in line 1

Page H-8
(a) last word in line 1

Page H-9
(b) last word in line 1

Page H-3, XX.9620 (b)
We are pleased that a small source exemption of 100 tons/year has been recommended by EPA.

Page H-5, XX.9630
(a)(3) In specifying a percent efficiency for carbon adsorption, incineration, and alternative systems, it would appear to be more practical and equitable to specify a common efficiency level. A common level would not favor one system over another, and would not penalize one system over another. For example, the percent efficiency for a carbon adsorption system determines the regeneration cycle frequency and breakthrough point, which determines regeneration time and cost. A higher percent efficiency for carbon adsorption, or for an alterntive system, may penalize these

selections over the selection of an incineration system. It is therefore suggested that a common percent efficiency of 90% be recommended for the three options in (i),(ii) and (iii).

Page H-8, XX.9640 Compliance Schedules
The compliance schedules proposed in (1),(2) and (3) are, in our opinion, unrealistic. It is known that regulations development by the States is behind schedule, adoption of regulations for the graphic arts industry is not expected in many states until early 1980. To require final plans by March and April 15, 1980, is for practical purposes, unrealisitc. It has been our experience that approval of final plans by most agencies, requires more time than the three months suggested in the guidance document between submittal of final plans and awarding of contracts or issuing purchase orders.

It is our opinion, that equipment delivery times for VOC control equipment will become extended beyond the proposed compliance schedule time as increased orders extend beyond the equipment manufacturer's ability to produce.

Sufficient evidence has been submitted to EPA and to State agencies to indicate that the alternative of low solvent technology may not be possible to develop, test and implement in the time proposed in the guidance document.

In summary, it is clearly evident that insufficient time is being allowed to properly analyze a multi-source VOC emission, properly engineer the most optimum system (particularly considering energy requirements, solvent availabilty, existing equipment modifications, and product acceptability). We believe it will become mandatory to develop a more realistic compliance time schedule.

Page L-2, XX.8010 Applicability
(a) Because it appears that adoption by States of regulations for graphic arts will extend beyond December 31, 1979, it is suggested that the effective date be left to each State.

St. Regis Paper Company appreciates the opportunity to comment on the proposed guidance document. We would be happy to participate in discussions of the document.

Very truly yours,

E. T. Tonn, PE
Environmental Engineer

ETT/abl

FLOATING ROOFS

AtlanticRichfieldCompany
[illegible]
[illegible]
[illegible]
[illegible]

July 19, 1979

Mr. Tom Williams
Control Programs Development Division, MD-15
U. S. Environmental Protection Agency
Research Triangle Park
North Carolina 27711

Dear Mr. Williams:

The Atlantic Richfield Company has reviewed the draft Guidance Document to assist state and local agencies in preparing RACT regulations for volatile organic compounds, which you sent to us. Our specific comments are attached.

The concept of "sample" regulations is useful. The difficulty with them is that, as in the case of Control Technique Guidelines (CTG's), state and local agencies have interpreted the language of the "samples" as the bare minimum acceptable by EPA. In addition, EPA personnel at the regional offices have also made this interpretation, often without consulting with the various authors of the CTG's to determine the true intent of CTG language. The result has been additional turns of the screw by each agency when developing regulations which "ratchet down" on existing facilities.

It would be a significant improvement if EPA would provide sample format only and leave the development of appropriate numbers and other specifics to the various agencies. This would allow for maximum flexibility to meet local or state needs and would preclude overly restrictive regulation simply to satisfy the language of a "sample" regulation.

Sincerely,

M. C. Roman

M. C. Roman for F. W. Chapman
Attachment

cc: Mr. H. M. Dole, Atlantic Richfield Company

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ATLANTIC RICHFIELD COMPANY

Comments on draft EPA Guidance Document
to State and Local Agencies
July 19, 1979

Page A-2 through A-4

All definitions should be consistent with previous definitions of the same item in the Clean Air Act and its amendments.

Page 1-7, para (b)(1) - "monthly" inspections

The specific inspection interval should reflect experience with tank seal wear and local air quality requirements.

Page L-4, para (a) - "disposal...evaporation into the atmosphere."

It is impossible to eliminate hydrocarbon evaporation if hydrocarbon occurs in sewage treatment plant influent. This language is inconsistent with the stated intent.

Page L-5, para (a) - "...Maintenance Manual..."; and
para (c) - "...Operators Manual..."

The requirement to prepare, submit for approval, and utilize the subject manuals represents a clear move on the part of EPA to get into the business of directing private sector operations on a daily basis. We are opposed to this.

Page L-7, para (a), "...immediately..."

It is impossible to have a malfunction and simultaneous notification of a regulatory agency or anyone else. A reasonable notification period should be allowed. One hour after discovery of the malfunction should be satisfactory notification.

Page L-7, para (b), "...require feasible and practical modifications..."

This language might be interpreted to require redundant or over-capacity equipment for potential problems or regular maintenance requirements which result in short term excess emissions occurences. Normal unit startup and shutdown emissions are not likely to cause violations of ambient air quality standards or interfere with reasonable further progress toward attainment. There must be some allowance for necessary maintenance without requiring expensive equipment which is likely to be idle for months, perhaps years, between uses.

A good example of this is a fluid catalytic cracking unit (FCC) in a petroleum refinery. During startup and shutdown an FCC is in a nonsteady-state operation for a short time (one or two days) until the proper catalyst bed levels, air rates, etc. are established. During this nonsteady-state operation, emission control devices do not operate as efficiently as normal and more pollutants than normal are emitted. To require refineries to replace or add to existing FCC emission control devices with new equipment that is designed to control emissions at the same efficiency during brief startup and shutdown operations as during steady-state operation would be extremely expensive, if possible. The air quality benefit would be very minimal since FCC units are normally operated for more than a year between maintenance shutdowns.

We strongly recommend that:

(1) the rules be limited to application to recalcitrant organizations and facilities that have not invested capital in facilities required by environmental regulations, and

(2) that the Director may not require redundant or excess capacity equipment for potential problems or regular maintenance requirements.

Page L-15 - L-16, "Petition for Alternative Controls"

This concept is worthy of further development and amplification and should be allowed for by all (local, state, federal) regulatory agencies. It will result in the most cost-effective controls and encourage innovative approaches to minimizing emissions. We compliment EPA on the concept. As noted in our general comments, however, "sample" regulations tend to become the yardstick for measuring up counter proposals. Specifics should be eliminated from all "sample" rules to permit maximum flexibility in regulation development.

Chevron

Chevron U.S.A. Inc.
575 Market Street, San Francisco, CA 94105
Mail Address: P.O. Box 7643, San Francisco, CA 94120

G. H. Weber
Manager, Engineering
Marketing Operations

July 18, 1979

Mr. Tom Williams
Control Programs Development Division
MD-15
Environmental Protection Agency
Research Triangle Park, NC 27711

Dear Mr. Williams:

I am writing concerning your request for comments on the Document to Assist State and Local Agencies in Preparing Regulations for Volatile Organic Compounds (RACT categories) by GCA Corporation. I shall limit my comments to Section XX.9700, Petroleum Liquid Storage in External Floating Roof Tanks.

XX.9720 (a) The application of the regulation should be increased to 160,000 liters (42,200 gallons) to exclude 1000 barrel tanks which are a common size at many locations.

XX.9730 (a)(2)(iii) This paragraph should be clarified as explained in the discussion on Page I-12. I suggest the following wording:

(a)(2)(iii) For vapor mounted seals, the area of gaps exceeding 0.32 cm. (1/8 in.) in width between the secondary seal and the tank wall shall not exceed 21.2 cm^2 per meter of tank diameter (1.0 in^2 per foot of tank diameter) as determined by the method in § XX.9750(c) and the width of any gap shall not exceed 1.27 cm (1/2 in.).

Comment - It is suggested that the frequency of inspection be made yearly and that record be kept for two years only unless directed by the administrator. The regulation as put forth is unduly burdensome and materially increases bookkeeping requirements.

XX.9750(b) The requirement of 30 days' notice before testing seems excessive. Notice of no more than seven days should be sufficient.

If there are any questions on these comments, please call Don Gilson at (415) 894-6897.

Very truly yours,

G.H. Weber by DFG

Getty Oil Company | P. O. Box 5237, Bakersfield, California 93388 • Telephone (805) 399-2961

Western Exploration and Production Division, R. A. Griffith, Pipeline Manager

July 19, 1979

File: GOV 1-15-5

Environmental Protection Agency
Control Programs Development Division
MD-15
Research Triangle Park, North Carolina 27711

Attention: Mr. Tom Williams

Re: Guidance Document for the Group II Control Technique Guidelines for Volatile Organic Compounds

Gentlemen:

Thank you for giving us the opportunity to comment on the subject proposed guidelines. While we concur in principal with the proposed guidelines and techniques, we believe the following changes in language would be equally as effective in controlling air pollution and less cumbersome to administer.

Page I-4, Paragraph XX.9720 (b) (2)

Delete expression "prior to lease custody transfer"

Reason: Whether custody transfer of oil takes place has no relationship to emissions.

Page I-7, Paragraph XX.9730 (d) - Change to read:

"The owner or operator of a petroleum liquid storage vessel subject to this regulation, shall retain records required by this part and shall submit such records to the County Air Pollution Control Officer upon his request."

Reason: Since air pollution control regulations are being administered and enforced by local air pollution control districts who in turn respond to state level authority, we recommend that EPA look to state level authority for compliance information.

Page I-10, Section XX.9740

The compliance schedules should be adjusted so that final compliance will be achieved by January 1, 1982.

Reason: While EPA recognizes and addresses the problem on Page I-11 that a one-year period for compliance will be too short for many owners, the filing and getting approval on alternate plans may take as long as actual compliance. We recommend a two-year allowance for compliance to allow adequate engineering, permitting and construction time.

Page I-12, Paragraph XX.9750 (a)

The last sentence of the paragraph should be deleted.

Reason: It is not necessary for persons who are measuring roof seal gaps, or reading thermometers or running laboratory tests on hydrocarbon liquids or their supervisor be "qualified by training and/or experience in the field of air pollution testing" to be able to complete the reports necessary for compliance with Section XX.9730. Compliance with Section XX.9730 can be determined by comparing physical criteria with printed regulations by persons of normal intelligence who are not necessarily trained in air pollution testing.

We hope these comments will be useful to you in preparing the final subject guidelines. If you wish to discuss any of these items, you may contact Mr. C. M. Whitlock of this office.

Very truly yours,

GETTY OIL COMPANY

CMW:clk

cc: Mr. R. L. White, Attn: Don Gallaher

William M. Nolan
Manager
Environmental Control Division

Marathon Oil Company

Findlay, Ohio 45840
Telephone 419/422-2121

August 10, 1979

Mr. Tom Williams
Control Programs Development Division, MD-15
ENVIRONMENTAL PROTECTION AGENCY
Research Triangle Park, North Carolina 27711

Dear Mr. Williams:

The attached comments are offered on the proposed Guidance Document for the Group II Control Technique Guidelines for Volatile Organic Compounds.

Very truly yours,

William M Nolan

WMN rs

Attach.

COMMENTS OF MARATHON OIL COMPANY ON DRAFT GUIDANCE DOCUMENT FOR THE GROUP II CONTROL TECHNIQUE GUIDELINES FOR VOLATILE ORGANIC COMPOUNDS

Section XX.9730 (b)(1)

It is suggested that routine inspections once per month are too frequent and that an equally effective alternative would be twice a year, say just prior to and after the winter season.

Section XX.9730 (d)

Annual filing of the detailed inspection reports and operational records would be highly impractical. The operational records would be especially voluminous and since these records will be available to the director, as he deems necessary, it does not seem prudent for all operators to make annual filings of this material.

Section XX.9730 (e)

It is recommended that the retention time for records be no longer than three years. The current operating record retention requirement of the DOT for Marathon Pipe Line Company is three years.

Section XX.9740 (a)

The suggested compliance schedule is not realistic. Individual state requirements will not be completely known until January, 1980. In order to submit final plans, all engineering will have to be finalized, material and contractors quotations obtained, and a complete schedule of construction completed by March 15, 1980. The task required would involve review of each individual tank to insure proper installation and fit of the secondary seal. The efforts of the various Marathon operating divisions, the seal manufacturers, and contractors to evaluate the work will take much longer than the proposed eleven weeks. The time required will be in excess of six months. The situation for the manufacturers and contractors would be further complicated by the volume of quotation requests they will be receiving from all operators of VOC storage tank facilities. Associated delays in normal quotation response, delivery schedules, and installation schedules make estimating the complete construction schedule difficult at this time.

Section XX.9740 (b)

The provision for submitting an alternate compliance schedule by March 15, 1980 is restrictive for the same reasons described in the discussion of Section XX.9740 (a). A minimum of six months should be allowed for preparation and the transmission of an alternate compliance schedule.

Section XX.8040 (a)

Provision for immediate notification of the Director of a breakdown or malfunction of more than one hour duration of any control equipment is unduly restrictive in the case of a products distribution terminal vapor recovery facility. It is suggested that the breakdown or malfunction of terminal vapor recovery capability exceeding 24 hours duration is more appropriate for notification purposes. Minor malfunctions that are repairable in the same day do not justify notification.

Section XX.8070

Monitoring devices to be considered should be practical and readily available for the process being monitored. The monitoring device performance specification of Appendix B of 40 CFR 60, Standards of Performance For New Stationary Sources, is suggested as a desirable means of monitoring instrument specification.

WMNolan

8/10/79

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Dan Landon, President

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Vice President
2025 Alta Vista
Bakersfield, California
(805) 325-5562

OTHER LOCATIONS

2513 So. H Street
in Benton Park

2221 Brundage Lane
in Brundage Square

5630 Stockdale Highway
in Stockdale Village

2232 Niles Street
Corner of Ash Street

3801 Auburn Street
Corner of Oswald

1601 McDonald Way
Just off Ming

2507 N. Chester Ave
at China Grade Loop

Granny's Wash
2234 Niles Street
3805 Auburn Street
1601 McDonald Way
2505 N. Chester Ave.

July 25, 1979

Mr. Thomas Williams-Program Analyst
Control Program Development Division
Research Triangle Park, North Carolina 27711

Ref: Section 9800 Perchlorethylene Dry Cleaning Systems.

Dear Sir:

Dry-cleaning plants in the United States using perchlorethylene cleaning solvent number 18,000 plus in the country. Of these many plants over 50% employ five people or less and their sales average is above $70,000.00. Most of these stores are owner-operated, with the owner making a job for himself. They possess limited capital, operate equipment of well over ten years of age, they lease limited space, much of it in high rent shopping centers, and are quite competitive.

We recommend exemption from the regulations of locations where solvent consumption is under 100 gallons per month on a twelve month running average, this, in addition to the exemptions already provided for Coin-op Cleaners and provisional exemptions because of space limitation and steam generating capacity.

Very truly yours,
Dan Landon Enterprises, Inc.

Dan Landon

DL/lr

cc: Mr. William Roddy
Mr. William Fisher, Director Research Department

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J.M.S. ENTERPRISES INCORPORATED
STEPHEN E. BERGLUND

July 20, 1979

Mr. Thomas Williams-Program Analyst
Control Program Development Division
Research Triangle Park, North Carolina 27711

Ref: Section 9800 Perchlorethylene Dry Cleaning Systems.

Dear Sir:

Dry-cleaning plants in the United States using perchlorethylene cleaning solvent number 18,000 plus in the country. Of these many plants over 50% employ five people or less and their sales average is above $70,000.00. Most of these stores are owner-operated, with the owner making a job for himself. They possess limited capital, operate equipment of well over ten years of age, they lease limited space, much of it in high rent shopping centers, and are quite competitive.

We recommend exemption from the regulations of locations where solvent consumption is under 100 gallons per month on a twelve month running average, this, in addition to the exemptions already provided for Coin-op Cleaners and provisional exemptions because of space limitation and steam generating capacity.

Very truly yours,
J.M.S. Enterprises, Inc.

Stephen E. Berglund

SEB/pts-5

cc: Mr. William Roddy
Mr. William Fisher, Director Research Department
Mr. Dan Landon, District Director

PATTON, BOGGS & BLOW
2550 M STREET, N. W.
WASHINGTON, D. C. 20037
(202) 457-6000

ATTORNEY'S DIRECT DIAL

202-457-6074

JAMES R. PATTON, JR.
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WU TELEX: 89-452
TELECOPIER: 457-6315

July 19, 1979

Mr. Tom Williams
Control Programs Development Division
MD-15
Environmental Protection Agency
Research Triangle Park, NC 27711

Dear Mr. Williams:

This letter sets forth the comments of the drycleaning industry on a draft "Guidance Document for the Group II Control Technique Guidelines for Volatile Organic Compounds" (hereinafter referred to as the "Guidance Document"). Those parts of this draft document which were forwarded to us include sample regulations applying specifically to percloroethylene ("perc") drycleaning establishments and more general regulations which are also applicable to perc drycleaners.

These comments are submitted on behalf of the International Fabricare Institute (IFI), the Institute of Industrial Launderers (IIL), and the National Automatic Laundry and Cleaning Council (NALCC). These three trade associations represent a broad spectrum of the drycleaning industry. IFI represents commercial drycleaners which are typically very small businesses. IIL represents businesses which perform laundry services for other businesses; these launderers normally have only small drycleaning units. NALCC represents coin-operated laundries and cleaners.

Although this draft Guidance Document is acceptable in most respects, it is subject to several weaknesses which should be corrected before a final Guidance Document is issued. The most serious objection to these sample regulations arises from a failure to take account of the very small size of most drycleaning establishments. Two problems result from this: the sample regulations would establish requirements which cannot reasonably be imposed on small businesses such as the average drycleaner; and the sample regulations fail to set forth a regulatory scheme which is sufficiently understandable for purposes of compliance and enforcement. Other problems concern some of the testing requirements, the compliance schedules proposed for perc drycleaners, and the general disposal requirements. All these problems areas are discussed below.

Drycleaners are the prototype small business. When the average American thinks of drycleaners, he undoubtedly thinks of the neighborhood drycleaning establishment which is run by its owner with the assistance of one or two employees. Statistics that we have previously provided EPA shows that this perception is largely correct. For example, the average gross annual receipts of all commercial drycleaning plants is only $71,000 and the average net profit (before taxes) is $4600 per year. Further, drycleaners are usually not able to obtain the most skilled and highly competent employees due to the low wages which they have to pay. Finally, it should be obvious that such small, low-profit businesses will be quite limited in the financial burden that they can undertake in order to comply with any regulations that are eventually promulgated. Thus, drycleaning establishments are far different from many of the plants that would be regulated pursuant to the Guidance Document and we believe that these differences should be taken into account in developing this document.

We are of the opinion that most, if not all, drycleaning establishments want to comply with all applicable laws, including those designed to protect the environment. If this is to be done, however, the regulatory burden on drycleaners must be reasonable--one which can be met with a reasonable good faith effort and without unreasonable expenditures of money and time. Further, the regulatory requirements must be readily understandable. In such a small business-type setting, the average owner of a drycleaning establishment will not be able to determine what is necessary to comply if he must constantly cross reference several documents pertaining to applicable regulatory requirements. By the same token, enforcement will prove difficult in such circumstances.

We believe that EPA's Control Techniques Guidance document on perc drycleaners (EPA 450/2-78-050; OAQPS No. 1,2-177) met this test of regulatory reasonableness. After a great deal of effort in developing it by all concerned, the final CTG set forth a regulatory system which was reasonable, practical and workable. The sample regulation in the CTG will encourage a significant reduction in VOC emissions while being of such a nature that trade associations like IFI, IIL, and NALCC can assist in assuring compliance with it. Indeed, in view of the foregoing, we are somewhat puzzled as to the rationale for revising the CTG sample regulation as is done in the Guidance Document.

The Guidance Document does not adequately meet the test of regulatory reasonableness. In one instance, however, it does show a careful consideration of reasonableness and we would like to commend the draftsmen on this. Section XX.9820(b) excludes coin-op drycleaners from the regulation on account of their small percentage of emissions and their inability to install control equipment. This exclusion properly takes account of regulatory reasonableness and recognizes the limits of what is possible.

Unfortunately, the Guidance Document does not do this in every instance and several examples of this lack of regulatory reasonableness are set forth below. We request that the provisions described below be modified in order to make the burdens imposed on those who are to be regulated more reasonable.

--Section XX.9830(c) permits the grant of a variance from the dryer exhaust control requirements if the owner is able to demonstrate technological infeasibility. It is unreasonable to expect the owner of a drycleaning establishment which might be eligible for such a variance to prepare a meaningful variance petition since the drycleaners who would be eligible are in the worst financial and operating position and are least able to prepare or afford to have prepared such a petition. Instead of the variance procedure in paragraph (c), there should be a regulatory exclusion, with discretion in the state Director to exclude other establishments in appropriate circumstances. The CTG sets forth such an exemption in Part 1.3, Regulatory Approach. We recommend that the relevant language of the CTG be substituted for present section XX.9830(c):

> "Subparagraphs (a)(1) and (a)(2) are not applicable to plants where dryer exhaust controls cannot be accommodated because of inadequate space or to plants where insufficient steam capacity is available to desorb absorbers. The Director may exclude other plants from the scope of subparagraphs (a)(1) and (a)(2) if it is demonstrated that other hardships justify such an exclusion."

--Section XX.8030 of the general regulations requires the owner or operator of a facility to make available an Inspection and Maintenance Manual for all control equipment, to keep a written record of all maintenance or repair work performed on the control equipment, and to submit an Operations Manual to the Director. Virtually no drycleaning establishment in the United States has such manuals or keeps such records at present, and it is not reasonable to expect such small businesses to develop meaningful manuals or maintain meaningful maintenance records of the type contemplated. Although such requirements may be reasonable for the comparatively large plant which is the typical subject of air pollution control regulations, such requirements simply cannot be complied with by the average drycleaning establishment, which is principally concerned with keeping its head above water financially. Accordingly, we recommend that Section XX.8030 be modified so that these provisions will not be applicable to drycleaning establishments.

--Section XX.8040 establishes certain requirements with respect to breakdowns and malfunctions, operation changes, and the keeping of records. Application of this section to the average drycleaner is not justifiable for the reasons discussed in connection with Section XX.8030, above, and this section should be modified to exclude drycleaners from the scope of its applicability.

--Section XX.8070 would impose certain monitoring, recordkeeping, and reporting obligations on drycleaning establishments. For the same reasons discussed with respect to Section XX.8030, above, this is an unreasonable requirement to place on drycleaning establishments. Therefore, it should be modified to exclude drycleaners from the scope of its applicability.

In addition, some parts of the draft sample regulations are not sufficiently understandable to insure ready compliance and enforcement. For example, Section XX.9850(c) sets forth certain test procedures by reference to the CTG and to an American National Standards Institute paper. Instead, the regulations should specifically set forth the applicable test procedures in detail. For example, the sample regulations should specify where an operator or enforcement officer is to inspect for liquid leakage, as is done in Section 4(a) of part 1.3 of the CTG. This subsection should be incorporated into the sample regulations. Similarly, the methods of testing for perc concentrations in carbon adsorber exhausts and in the vicinity of gaseous leaks should be specifically set forth when such test procedures are made applicable. Finally, the ANSI paper described in subparagraph (c)(3) should be attached to the regulations instead of being incorporated by reference. We believe that these changes, while having no substantive impact on the sample regulations, would make it easier for an owner or operator to comply with them and would also make enforcement easier. Since ease of compliance and enforcement are of critical importance, we strongly recommend that Section XX.9850(c) be modified in the manner discussed above.

A second problem involves the testing requirements set forth in the sample regulations. The CTG stated that there was no testing device available for monitoring perc concentrations in carbon adsorber exhausts or near gaseous leaks, and we are unaware of the development of any such devices since the publication of the CTG. As a result, we recommend that the provisions of Section XX.9850(c) which are relevant to such testing be left blank with a footnote indicating that the test procedures will be supplied when appropriate testing devices are developed by EPA. To do otherwise would be misleading since that would imply an ability to test which simply does not exist. In order to avoid such a result, the sample regulation should be revised to eliminate the present applicability of testing requirements where no testing devices exist.

Section XX.9850(d) is subject to the same problem and should be revised so that its continuous monitoring requirements are inapplicable until required monitoring devices are available. Further, continuous monitoring requirements should not be imposed on drycleaners at all unless an inexpensive continuous monitoring device is developed. If such an inexpensive device is not available, continuous monitoring would not be reasonable for drycleaners.

A third problem concerns the compliance schedules set forth in Section XX.9840. As the CTG and the Comments to the sample regulations recognize, it may not be possible to achieve the time deadlines set forth in subparagraphs (a)(1)(iv) and (v) because of an inability to obtain the necessary control equipment. Despite this, the sample regulations, as now worded, would require compliance even though compliance might be impossible. In order to avoid placing those who want to comply in such a position, we believe that this inability to obtain necessary control equipment should be specifically recognized in the body of the sample regulations. This could be accomplished by adding a new subparagraph (a)(1)(vi) which would state that compliance with subparagraphs (a)(1)(iv) and (v) would not be required if the owner or operator has made a good faith effort to obtain the necessary equipment but has been unable to do so throught no fault of his own.

A fourth problem concerns the requirements for disposal of volatile organic compounds set forth in Section XX.8020 of the regulations. Subsection (a) of this section would prohibit the disposal of volatile organic compounds in a manner that would permit their evaporation into the atmosphere. We are not aware of any authority in the Clean Air Act pertaining to disposal practices. There are obviously such requirements in the Resource Conservation and Recovery Act, but there are also substantial questions as to the propriety of an EPA "recommendation" that such requirements be included in State Implementation Plans mandated by the Clean Air Act. Further, the cost of implementing this requirement may be considerable and it does not appear that questions involving such costs have been adequately studied. As a consequence, we urge the deletion of Section XX.8020 or an exemption from its provisions for drycleaners.

We hope the foregoing comments are useful to EPA in its consideration of these draft sample regulations and urge that the final sample regulations be modified in accordance with the foregoing. We request a meeting with you at your earliest convenience in order to discuss the issues raised by EPA's proposal to issue these sample requlations and by our comments thereon.

Sincerely,

T. A. Vandervern, Jr.

TAV/mw

cc: Mr. Bill Fisher, IFI
Mr. Bud Sluizer, IIL
Mr. Ward Gill, NALCC

One HOUR
"MARTINIZING"
THE MOST IN DRY CLEANING

TEDDY BEAR
COIN-OP LAUNDRIES

TEAM ENTERPRISES INCORPORATED

FRED P. JONES
President

July 16, 1979

Mr. Thomas Williams-Program Analyst
Control Program Development Division
Research Triangle Park , N. C. 27711

Ref: Section 9800 Perchlorethylene Dry Cleaning Systems.

Dear Sir:

Retail dry-cleaning plants using perchlorethylene cleaning solvent number 18,000 plus in the country. Of these over 50% employ 5 people or less and have gross incomes averaging around $70,000.00. The Bulk of these stores are owner-operated, in effect the owner making a job for himself. They possess limited capital, operate equipment of well over 10 years of age, lease limited space, much of it in high rent shopping centers, and are highly competitive. Steam generating capacity of these stores is that required to operate drying and pressing equipment only.

We recommend exemption from the requlations of locations where solvent consumption is under 100 gallons per month on a 12 month running average. This in addition to exemptionsalready provided for Coin-op Cleaners and provisional exemptions because of space limitation and steam generating capacity.

Very truly yours,
TEAM Enterprises, Inc.

F. P. Jones, President

cc Mr. Wm. Reddy
Fresno County Air Polution Control District
1246 L Street Fresno, Calif. 93701

Mr. Wm Fisher Director Research Dept.
International Fabricare Institute
12251 Tech Road Silver Springs Md. 20904

Mr. Dan Landon-District Director
California Fabricare Institute
2415 E. Ashland Fresno, Calif. 93726

TANK TRUCKS

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July 16, 1979

If the inspector is unable to witness the test, the test is allowed to continue. This procedure has proven to be totally acceptable to both the State inspectors and the truck owners.

We appreciate the chance to make these comments and hope that you will contact us if there are any questions.

Very truly yours,

C. B. Zachary

Chevron

Chevron U.S.A. Inc.
575 Market Street, San Francisco, CA 94105
Mail Address P.O. Box 7643, San Francisco, CA 94120

C. B. Zachary
Manager, Transportation
Marketing Department

July 16, 1979

Mr. Tom Williams
Control Programs Development Division
MD-15
Environmental Protection Agency
Research Triangle Park, NC 27711

Dear Mr. Williams:

Thank you for the opportunity to comment on the proposed EPA guidance document XX.9900 "Leaks from Gasoline Tank Trucks and Vapor Collection Systems."

Basically, we are in agreement with the proposed document. It appears to be a reasonable approach to the problem of obtaining uniform vapor recovery regulations. There are, however, a few areas that we would like to make specific comments on.

The test outlined in Section XX.9930(b)(1)(ii) is not a quantitative test. While the proposed test may be the only one suitable for checking leaks at piping fittings, the majority of the leaks are in the dome area. The Western Oil and Gas Association, in conjunction with the South Coast Air Quality Management District (SCAQMD) in the Los Angeles area, is developing a quantitative test done with pressure at the truck loading rack. The San Diego County Bag Test (refer to Sections 3.1.4 and 3.2.8 of EPA document 450/3-79-018, April 1979) is a quantitative test for bottom loaded trucks. We feel that both these quantitative tests are superior, where applicable, to the use of a combustible gas detector.

Section XX.9930(b)(1)(iii) should contain a provision to define "excessive liquid drainage" at the termination (disconnect) of a loading operation. Rule 462, Section (a)(6) of the South Coast AQMD contains a very realistic approach to this problem of drops of liquid trapped between two halves of a dry break fitting or drops of liquid from a top loading stem. Rule 462 permits a specified small quantity of liquid to be lost in the two situations outlined above.

Our final comment pertains to Section XX.9950(b). We feel that the requirement for a 30 day written notice prior to testing a truck is completely impractical. Also, the provision for the test to be cancelled at the discretion of the Director will completely disrupt maintenance and dispatching schedules. This written requirement will generate a tremendous amount of unnecessary paperwork. Tank truck tests are normally scheduled not more than one week in advance. This schedule is based on truck condition, parts availability and available maintenance personnel. Once a truck is scheduled for a test, causing a delay will be quite expensive for the truck owner.

The California Air resources Board certification program (which is administered by the California State Fire Marshal's office) simply requires verbal notification "prior to testing." In actual practice, the notification is given 24 to 48 hours prior to the test.

NATIONAL TANK TRUCK CARRIERS, INC.

CLIFFORD J. HARVISON

1616 P STREET, N.W. WASHINGTON, D.C. 20036
AREA CODE 202 797-5425

27 July 1979

Mr. Tom Williams
Project Officer
Control Programs Development Div.
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Research Triangle Park, NC 27711

Dear Mr. Williams:

The following are comments of NTTC, the national trade Association for the for-hire tank truck industry, on state guidelines for rules for vapor recovery and leak testing.

We doubt that these rules will have any great affect on air quality because the hydrocarbon emissions from tank truck "leaks" are very small when compared with other sources of air pollution. In other words, carriers (and the public through higher prices for their products) will be forced to pay for insignificant and temporary reductions of leakages.

These costs will be high for the following reasons:

1) out of service time for a cargo tank is expensive. While these tests are being made (and the tank is being sealed and subsequently retested) a shortage of transportation capacity for gasoline will be created. The downstream dislocation, inconvenience and inefficiencies will create a loss of productivity far greater than has been contemplated;

2) Present highway vehicles are not built to maintain leak tightness while in operation. Once the vehicle is tested and made leak tight, the first pot hole may open the leak again. Then the tank will not be leak tight until the next test. It is wasteful to make the vehicle leak tight for a test when we know in actual operation that the "tightness" will probably be very temporary;

3) The costs involved in training enforcement personnel and the administrative costs will be high when repeated in each state.

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Inspection of the tank truck is now required by the U.S. Department of Transportation every two years or whenever the vessel has had welding done on it. The inspection is "visual" if no hot work has been done. The "visual" must be supplemented by a hydrostatic test if the vehicle has been in an accident or if welding has been performed. The inspection and test procedures are completely described by the DOT in 49 CFR 177.824, as well as instructions for marking the tank indicating compliance with the requirements.

The frequency for testing as described by the EPA in these guidelines should coincide with the present DOT requirements and the test date markings should be modified to correspond with DOT's rules. NTTC believes that if these regulations are adopted for use by the states, the time period for testing should correspond with the Department of Transportation's rules (49 CFR 177.854) for cargo tanks.

The requirements to notify the Director of Schedules, etc. is ridiculous. The frequency which the EPA is requesting for testing is an example of an "over kill" reaction. These regulations are being suggested before the vehicle hardware exists which can effectively and realistically comply.

Therefore, we think the rules are wasteful, non-productive, inflationary, and offer air improvement that is insignificant. For EPA to create these guidelines and then encourage (force with threats of withholding funds) the states to implement them is an example of regulation at its worst.

Very truly yours,

Albert B. Rosenbaum, III
Assistant Managing Director

T T·M A

Tank Conference

TRUCK TRAILER MANUFACTURER ASSOCIATION
2430 PENNSYLVANIA AVENUE, N.W. • WASHINGTON, D.C. 20037

CHARLES J. CALVIN
President

Telephone (202) 785-5833

September 6, 1979

Mr. Tom Williams
Project Officer
Control Programs Development Division
U. S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

Dear Mr. Williams:

We would like the appendix to your Guidance Document for the Group II Control Technique Guidelines for Volatile Organic Compounds to contain the following comments.

The Truck Trailer Manufacturers Association which includes manufacturers of gasoline tank trucks and trailers as well as suppliers of manholes, vents, and vapor recovery equipment feels that the leak tightness criteria offered in the EPA Guidance Document should not be adopted by the states for the following reasons:

(1) It has not been demonstrated that air quality has been improved in areas where similar regulations are in effect.

(2) Many useful tank vehicles now providing good service will be obsoleted at great economic waste because the original design prohibits retrofit.

(3) Sealing up of the normal in-breathing and out-breathing vents on gasoline cargo tanks creates a condition that may be undesirable. The industry does not have sufficient experience with equipment operated at these higher pressures.

(4) We estimate that the total cost to retrofit the industry's tank trailer fleet over the next five years to be in excess of $140 million without taking interest or finance cost into consideration.

Attached you will find the data used to develop the population and economic information used to make our decision.

The TTMA cannot assess what effect gasoline emissions may have on the nations health. We do not feel EPA has shown that vapor recovery will significantly affect the total emissions. If, however, future research shows that vapor recovery in the gasoline marketing system is necessary it should be phased in on newly manufactured equipment only, without retrofitting existing equipment.

The TTMA Tank Conference feels that the API recommendation that the leak tightness requirement be less restrictive has merit and would be more practical than the 3 inches of water pressure change in 5 minutes recommended by EPA. It is also felt that the tank integrity pass/fail criteria should be based on the leak rate test and not on an explosivemeter test.

Sincerely yours,

Donald W. Vierimaa

Donald W. Vierimaa
Director of Engineering

DWV/em

Encl.

TTMA VAPOR RECOVERY STUDY
MAY 1979

TANKS NOT SUITABLE FOR RETROFIT:

The current tank trailer fleet consists of many tank trailers built prior to 1967 when the DOT MC specifications received a major revision. This MC specification revision specifies that the maximum calculated stress value must not exceed 20 per cent of the minimum ultimate strength of the material. This calculation considers stresses resulting from dynamic loading, internal pressure, superimposed loads, reactions of supports, and effect of temperature gradients.

Pre 1967 tank trailers were designed for the state-of-the-art and the requirements of the industry at the time they were built. The majority of these tank trailers were not built for bottom loading and vapor recovery. The vents were designed to open whenever the pressure or vacuum differed from atmospheric pressure.

Bottom loading required for vapor recovery usually involves high loading rates which require that the tank heads, shell, and fittings be capable of withstanding hydraulic surge greater than that encountered by top loading.

It would be a mistake to retrofit tank trailers for bottom loading and vapor recovery if they have not been designed for this modification. Further tanks in use for many years may have a lowered fatigue endurance and are therefore a poor risk to retrofit for vapor recovery and resulting operation above and below atmospheric pressure.

We therefore recommend that tanks not in compliance with MC 306 or MC 307 cargo tank specifications not be retrofitted for vapor recovery.

TANK CATEGORIES:

The work required of retrofitting tank trailers depends upon their configuration. The TTMA estimate of the cost of retrofitting tank trailers for vapor recovery is based on the following four categories of tank trailer configurations.

CATEGORY	CONFIGURATION
A.	MC 306 tanks already equipped for vapor recovery and bottom loading but without leak tightness integrity.
B.	MC 306 tanks set up for conversion to vapor recovery but with bottom loading capability.
C.	MC 306 tanks with no provision for vapor recovery but equipped for bottom loading.
D.	MC 306 tanks with no provision for bottom loading or vapor recovery.

For the purpose of these estimates, it is assumed that the average tank has four compartments.

An estimate of the vapor recovery retrofit cost per trailer and for the total estimated population follows:

CATEGORY	RETROFIT COST/TANK
A.	$ 616
B.	$ 1,712
C.	$ 2,456
D.	$ 6,590

The work required to convert all types of trailers is itemized in Appendix II. Items are then selected for each specification category. The cost for each modification is shown in the right hand column. Total cost of conversion for any category can be determined by adding the appropriate items of cost. See Appendix III.

Costs were calculated based on retail prices for material components and a labor rate of $22.50. Eight per cent Federal Excise Tax on parts and four per cent state sales tax. The detail of the cost build-up for each item is shown in Appendix IV.

POPULATION:

TTMA estimates that there are about 80,000 liquid tank trailers in service (Appendix I). It is further estimated that 54% of the liquid tank trailers were produced for flammable commodity service as MC 306, MC 305, or MC 303 cargo tanks.

It is conservatively estimated that 80% of the MC 306, 305, and 303 tank trailers are in regular or occasional gasoline service and would need to be retrofitted. The population of these gasoline tank trailers is 80,000 x .54 x .80 = 34,560.

It is estimated that of the 34,560 gasoline tank trailers in service, 30% or 10,368 tank trailers are pre-MC 306 tanks and should not be retrofitted.

It follows that there are about 24, 192 tank trailers that can be retrofitted for vapor recovery. TTMA has developed four categories of tank trailers which may be retrofitted for vapor recovery. An estimate of the population of each category is shown below:

A.	MC 306 tanks equipped for vapor recovery and bottom loading but without leak tightness integrity.	20% of 24,192 = 4,838
B.	MC 306 tanks equipped for conversion to vapor recovery and equipped for bottom loading.	25% of 24,192 = 6,048
C.	MC 306 tanks with no provision for vapor recovery but equipped with bottom loading.	25% of 24,192 = 6,048
D.	MC 306 tanks with no provision for vapor recovery or bottom loading.	30% of 24,192 = 7,258

It is estimated that 2,450 MC 306 tank trailers per year would normally be produced from 1980 through 1984. Retirement of the 10,368 gasoline tank trailers which do not qualify for retrofit for vapor recovery would increase the MC 306 tank trailer demand by an estimated 1,000 tank trailers per year. Of the 2,450 MC 306 tank trailers normally produced, 80% or 1,960 of these tank trailers would be in gasoline service. The expected MC 306 gasoline service tank trailer production expected per year over the five year period from 1980 through 1984 would be 1,960 + 1,000 = 2,960. The production over the five year period would be 14,800 MC 306 gasoline service tank trailers.

Of the total of 14,800 MC 306 tank trailers for gasoline service produced from 1980 through 1984, 70% (10,360) would normally be equipped with bottom loading, and 30% (4,440) would normally be equipped without bottom loading. Some of these tank trailers are presently equipped for vapor recovery due to existing state regulations requiring the control of hydrocarbons. The remaining tank trailers not normally equipped for vapor recovery, would have to be equipped with vapor recovery and 30% would in addition require bottom loading.

TTMA Vapor Recovery
Study -

May 1979

COST TO RETROFIT:

An estimate of the vapor recovery retrofit cost per trailer and for the total estimated population follows:

CATEGORY	RETROFIT COST/TANK	X	POPULATION	=	RETROFIT COST/ CATEGORY
A	$ 616		4,838		$ 12,980,208
B	$ 1,712		6,048		$ 10,354,176
C	$ 2,456		6,048		$ 14,853,888
D	$ 6,590		7,258		$ 47,830,220
Total			24,192		$ 86,018,492

ADDITIONAL COSTS:

New Tanks Normally Not Set Up for Vapor Recovery:

The cost of adding vapor recovery to new gasoline tank trailers which would not be equipped for vapor recovery if not for the EPA regulations requiring the control of hydrocarbon and benzene emissions is estimated at 10,360 tank trailers over the five year period, at $2,000 each, the cost of adding vapor recovery at the time of manufacture = $20,720,000.

New Tank Normally Not Bottom Loaded:

The cost of adding both vapor recovery and bottom loading to new gasoline tank trailers which would not be equipped with either if not for the EPA regulation is 4,440 tank trailers x $4,500 at the time of manufacture = $19,980,000.

Early Retirement:

Of the 10,368 gasoline tank trailers which should not be retrofitted for vapor recovery, it is estimated that about half of these tank trailers would be retired by 1984. The cost of the early retirement of the remaining 5000 tank trailers is estimated at 15% of their original cost of $20,000. The cost of the early retirement of these tank trailers is then 5,000 x .15 x $20,000 = $15,000,000.

TTMA Vapor Recovery
Study -

May 1979

TOTAL COST:

Retrofit	$ 86,018,492
New Tank Extra for Vapor Recovery	20,720,000
New Tank Bottom Loaded to Collect Vapors	19,980,000
Early Retirement	15,000,000
Total.	$ 141,718,492

APPENDIX I

LIQUID TANK TRAILER POPULATION:

It is a guess estimate that there are about 80,000 liquid tank trailers presently in service. It is estimated that MC 306 tanks make up approximately 54% of all liquid tanks manufactured. (1)

While a van trailer has a life expectancy of about 10 to 12 years, steel tank trailers are utilized for a longer time. A survey by Modern Bulk Transporter magazine (2) has shown that about 16% of the tank trailers in service are more than 20 years old. Based on a couple of surveys performed by Modern Bulk Transporter magazine of its readership (2), (3), whose accuracy may be questioned and assuming a steel tank trailer may be sold by the original owner to a second owner for use in some service for another five years, it will be arbitrarily determined that the average steel tank trailer life is 17 years.

Arthur D. Little made a survey of aluminum MC 306 cargo tank trailer owners in 1976 and found that the first owner uses the tank for five to seven years followed by a second owner's usage of an additional five to seven years. They estimated that the aluminum MC 306 tank trailer lifetime is 12.3 years including all owners.

The number of MC 306 or its predecessor tank trailers produced between 1965 and 1976 (12 years) is 36,911. The number of non-MC 306 type tank trailers produced between 1960 and 1976 (17 years) is 44,548. The total liquid tank trailers consisting of 12 years of MC 306 tanks and 17 years of non-MC 306 tanks is 81,459. If the average life of all liquid tank trailers is 12 years, then the number of liquid tank trailers produced between 1965 and 1976 is 69,879.

According to the 1972 Department of Commerce survey (1) there were 909,000 combination vehicles in service in 1972. Of these combination vehicles, 8.5%, 77,265 were liquid tank vehicles. This same survey in another form shows that 26.7% of the 287,000 liquid tank vehicles, namely 76,629 liquid tank vehicles have a liquid capacity of 4,000 gallons or greater.

According to the Department of Transportation (6) in 1975 there were 2,699,444 semi and full trailers registered by the states. Due to many of these trailers being registered in more than one state, TTMA estimates that there are really about 1,700,000 semi and full trailers. The Department of Commerce Census data (1) indicates that the number of tank trailers to all trailers produced during the years 1965 to 1976 (12 years) is .043. The number of tank trailers in service may be estimated by taking a 4.3% of 1,700,000 trailers to obtain 73,100 liquid tank trailers.

The National Tank Truck Carriers (a conference of the American Trucking Associations) estimates that there are about 30,000 for-hire tank trailers and about 40,000 private carrier tank trailers. This estimate does not include intrastate, milk cooperative, and exempt carrier tank trailers. The National Tank Truck Carriers estimates the total of tank trailers to be approximately 80,000 to 100,000

Arthur D. Little (4) estimated on the basis of gasoline demand from refinery to storage to service station, hours of terminal operations, and one spare tank trailer for every 20 tank trailers required to meet gasoline demand that the 1978 gasoline tank trailer fleet consists of 24,760 trailers. They (5) also estimate that about 90% of the aluminum MC 306 cargo tank trailers are used to carry gasoline. Department of Commerce (6) data for the years 1965 to 1971 indicates that over 70% of the MC 306 type cargo tank trailers were made of aluminum.

Appendix I (continued)

We shall calculate from the Arthur D. Little data the total number of liquid tank trailers:

Let A = number of aluminum MC 306 tank trailers.

B = number of steel MC 306 tank trailers.

T = total number of liquid tank trailers.

According to Arthur D. Little,

$24,760 = .9A + xB$

It is believed that some steel MC 306 tank trailers may see gasoline service but this number is small. We shall assume that $x = 0$.

Then, $24,760 = .9A$ and $A = 27,511$

According to Department of Commerce data,

$A = .7\ (A+B) = 27,511/.7 = 39,301$

We have earlier estimated that

$A+B = .54T$, that is, 54% of the liquid tank trailers are MC 306 tank trailers.

Then

$T = 39,301/.54 = 72,780$

Using the Arthur D. Little data on the number of gasoline tank trailers we estimate that the total population of liquid tank trailers is 72,780.

The COMMERCIAL CAR JOURNAL (7) in their June 1978 issue estimates that the population of liquid tank trailers is 131,920 based on annual production figures from the Bureau of the Census less scrappage.

The following is a compilation of the liquid tank trailer population based on the various methods of estimation discussed.

Appendix I (continued)

LIQUID TANK TRAILER PRODUCTION

Number of Liquid Tank Trailers	Source of Data
81,459	Dept. of Commerce trailer production data, 12 year MC 306 life, 17 year non-MC 306 life.
69,879	Dept. of Commerce trailer production data, 12 year life for all liquid tank trailers.
77,265	Dept. of Commerce 1972 Survey
73,100	Dept. of Transportation state registration trailer population modified by TTMA and Dept. of Commerce ratio of tank to all trailers.
80,000 to 100,000	National Tank Truck Carriers estimate based on member survey.
72,780	Arthur D. Little estimate based on gasoline demand and Dept. of Commerce ratio of aluminum to all MC 306 type cargo tanks and ratio of MC 306 to all liquid cargo tank trailers.
131,920	Commercial Car Journal estimate
85,200	Average

The Environmental Protection Agency has contracted with Pacific Environmental Services, Inc., to perform a survey of all types of tank trucks and determine the population, age, and size of each type It is also understood that the Department of Transportation is considering the required reporting of the number of tank vehicles in service carrying hazardous materials in order that they may determine the impact of their regulations

REFERENCES

1 "1972 Census of Transportation, Truck Inventory and Use Survey", Department of Commerce, October 1973, Tables 2, 8, and 9.

2 "1976 1977 Tank Trucking Industry Market Report" by Modern Bulk Transporter Magazine Editorial Staff.

3 "1974-1975 Tank Truck Market Report" by Modern Bulk Transporter magazine editorial staff.

4 "The Economic Impact of Vapor Control on the Bulk Storage Industry", draft report by Richard J. McCarthy, Arthur D. Little, July 1978.

5 Telephone communication with Richard J. McCarthy, Arthur D. Little, August 1978.

6 "Trailer and Semitrailer Registration - 1975" and "Publicly owned Vehicles - 1975", Department of Transportation, Federal Highway Administration, HHP 43, Table MV-11 and MV-7, July 1976

7 Commercial Car Journal, June 1978 issue, Page 138.

APPENDIX II

WORK MODIFICATION SUMMARY

	CATEGORY OF WORK	TANK TYPE A	B	C	D	COST DOLLARS
1.	Transport tank to shop	X	X	X	X	$ 52.50
2.	Steam to gas free and test for safe access.	X	X	X	X	62.50
3.	Modify manhole covers for higher pressure and check over existing vapor recovery system	X	X	X	X	402.27
4.	Install vapor recovery system on tank set up for conversion. With nipples in the flashing rail and flanges in the tank.		X	X	X	1,095.59
5.	Cut nipples into flashing rail and test for leaks			X	X	232.13
6.	Weld up skip welded rail			X	X	347.40
7.	Add bottom loading system - consists of dropping manifold, spacing out lines, installing openable bottom loading adapters, brake interlock float switches and mechanical vents				X	4,135.16
8.	Hydrostatic pressure test			X	X	164.06
9.	Vapor recovery pressure vacuum test	X	X	X	X	46.80
10.	Return tank to terminal	X	X	X	X	52.50

Appendix III

COST SUMMARY BY VEHICLE CATEGORY

	OPERATIONS	COST
CATEGORY A:		
	1	$ 52.50
	2	62.50
	3	402.27
	9	46.80
	10	52.50
	Total	$ 616.57
CATEGORY B: Same as "A" Plus		
	4	1,095.59
		616.57
	Total	$ 1,712.16
CATEGORY C: Same as "B" plus		
	5	232.13
	6	347.40
	8	164.06
	Cost of "B"	1,712.16
	Total	$ 2,455.75
CATEGORY D: Same as "C" Plus		
	Bottom loading #7	4,135.16
	Cost of "C"	2,455.75
	TOTAL	$ 6,590.91

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APPENDIX IV

COST BREAKDOWN BY CATEGORY OF WORK

		COST
CATEGORY 1:		
Transport tank to shop 70 MI at 75¢ per mile		$ 52.50
CATEGORY 2:		
Vapor free tank and test for safe working conditions avg. $50.00 to $75.00		62.50
CATEGORY 3:		
Replace vents in Betts covers, fill plates in Knapp covers		
Knapp Cost $16.50 Retail $33.00		
Betts Cost $27.00 Retail $54.00		
Average Cost:	$ 43.50	
Replace manhole covers and fill in gaskets	9.00	
Adjust mechanical vents and check and replace as needed hoses, clamps and gaskets - Vent gasket	1.60	
Replace hoods on 10% of units $74.00 each - avg. $7.40/comp.	7.40	
Subtotal per comp. parts	61.50	
Misc. parts, hose clamps, hoses, etc.	2.00	
Total parts and components	63.50	
8% FET	5.08	
Labor/comp. $1.25 hr. x $22.50	28.12	
Subtotal	96.70	
Total cost 4 x $96.70	386.80	
4% Avg. state tax	15.47	
Total Cost Category 3		402.27

CATEGORY 4:

Add hoods,connect and add down line		
Credit $7.40 for hoods replaced in category 3	(7.40)	
Hood - each	74.00	
Hoses - each	4.00	
Total Material/Compartment	70.60	
	x 4	
Total	282.40	
20' aluminum tube $3.50/ft.	70.00	
Bkt. and misc. parts	20.00	
4" male adapter and dust cap	47.68	
4 al. elbows and 1 tee	150.00	
Vacuum vent in flashing rail	72.00	
Total parts	642.08	
FET	51.37	
16 hrs. labor @ $22.50	360.00	
Subtotal	1,053.45	
4% state tax	42.14	
Total Category 4		$ 1,095.59

CATEGORY 5

Cut nipples into flashing rail and dye check for leaks		
Materials - nipples - elbow	40.00	
FET	3.20	
8 hrs. labor @ $22.50	180.00	
Subtotal	223.20	
4% state tax	8.93	
Total Category 5		232.13

CATEGORY 6

Weld up skip welded flashing rail and test - all labor - welding difficult because of dirty conditions		
16 hrs. labor @ $22.50	360.00	
4% state tax	14.40	
TOTAL CATEGORY 6		374.40

CATEGORY 7:

Add bottom loading to tank with 4"
piping and manifold
Worst conversion will be to drop
manifold and go to individual lines
with openable bottom loading adapters

MATERIAL:			
4 - B/L openable adapters ea. $278 x 4		$ 1,112.00	
4 - 5" mechanical vents, pads and gaskets $185.50 x 4		742.00	
4 - float switches and pads $110. x 4		440.00	
1 - wiring kit junction box, plug, etc.		100.00	
Brake interlock valves and tubing		130.00	
Pipe bracing and bracket, deflector plates		120.00	
Total parts		2,644.00	
8% FET		211.52	
LABOR:			
Drop manifold and spread lines	16 hrs.		
Mount valves and brace	8 hrs.		
Install deflector plates	8 hrs.		
Install vents, hook-up and adjust	16 hrs.		
Install float switches and wire	20 hrs.		
Install brace interlock		1,597.50	
Subtotal		4,453.02	
4% state tax		178.12	
Total worst condition			$4,631.14
If tank blanked for vents, floats and has individual lines material saved is $154.00			
$2,644.00 - $154.00		2,490.00	
FET		199.20	
Labor is only 36 hrs. compared to 71 hrs. -- 36 hrs. @ $22.50		810.00	
Subtotal		3,499.20	
4% state tax		139.97	
Total			3,639.17
Average cost - assume equal number of each type $4631.14 + $3639.17 divide by 2			4,135.1

CATEGORY 8:

Hydrostatic test in accordance with 3 PSI retest procedure	$ 157.75	
4% state tax	6.31	
Total Category 8		$ 164.06

CATEGORY 9:

Perform pressure vacuum test on V. R. System	45.00	
4% state tax	1.80	
Total Catehory 9		46.80

CATEGORY 10:

Transport tank back to dispatching terminal - same as number one	52.50

MISCELLANEOUS

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CENTURY SYSTEMS CORPORATION

P. O. BOX 133 / ARKANSAS CITY, KANSAS 67005
TELEPHONE 316 / 447-3311
TWX 910-740-6740

July 19, 1979

Mr. Tom Williams
Control Programs Development Division, MD-15
Environmental Protection Agency
Research Triangle, North Carolina 27711

SUBJECT: Review of Guidance Document for the Group II Control Technique Guidelines for Volatile Organic Compounds

Dear Mr. Williams:

This letter is in response to your request for comments on the referenced subject. We appreciate the opportunity to express our views from an instrument manufacturers standpoint.

Our general comment is that it appears that there is no clearly defined monitoring methodology for many of the CTG documents. It also appears that there has been limited applicable field evaluation of the methods described in the commonly referenced document "Measurement of Volatile Organic Compounds", EPA-450/2-78-041. Many of the draft guidance documents refer to the continual monitoring and add-on control equipment including "breakthrough of VOC on a carbon adsorption unit".

We would like to inform you that Century Systems Corporation is involved in the development of instrumentation designed specifically for the task of monitoring breakthrough and efficiency of carbon adsorption units. Unfortunately, we were late in compiling the required documents necessary to comment on a case by case basis. We hope by this letter, to be placed on the applicable mailing lists such that we receive draft and other documents necessary to submit timely comments.

Century attempts, where possible, to develop instruments for specific applications. There are many new applications resulting from recent EPA activities in the field of control of organic emissions. We must understand the requirements of these new applications if we are to develop suitable instrumentation. Normally an instrument developed for an application is more suitable than trying to find applications for existing equipment.

We appreciate the congenial open door policy that EPA personnel have extended to us and will try to arrange for closer liaison in the future.

Sincerely,

Robert W. Blihar
Regional Sales Manager

RWB:bs